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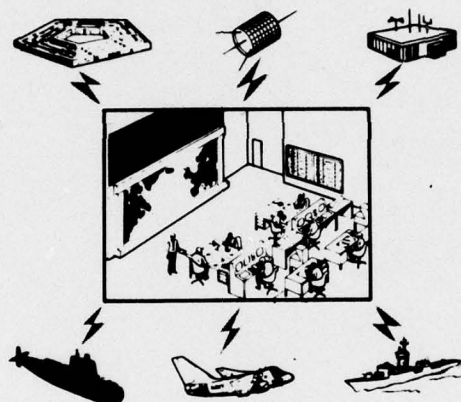
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NAVY READINESS REPORTING AND ANALYSIS SYSTEM (NRRAS)

PROGRAM MASTER PLAN (PMP)



Under Contract Number
N00014-77-C-0789



Prepared for:
Office of Naval Research
Department of the Navy
Washington, D. C.

Prepared by:
TRW Defense and Space Systems Group
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7600 Colshire Drive
McLean, Virginia 22101

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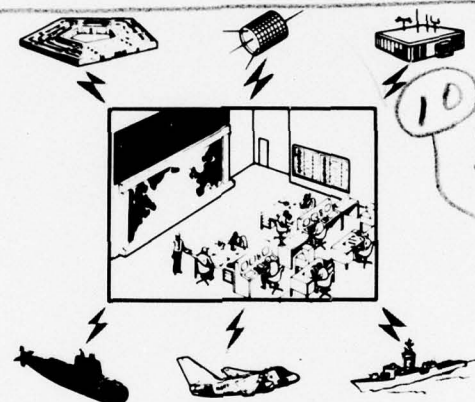
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B. D. / Wiggins
J. A. / Joy

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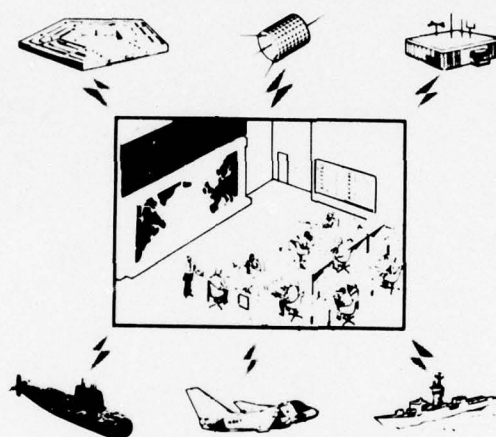
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) ✓ The Program Master Plan documents the development approach for the Navy Readiness Reporting and Analysis System (NRRAS). It describes the management organization and responsibilities for NRRAS under two alternatives; steady state funding over a seven year period (FY-78-84), and an accelerated time frame of five years (FY-78-82). The plan encompasses: major annual development objectives, significant scheduled events, detailed description of each year's tasks, major milestones and costs.		

NAVY READINESS REPORTING AND ANALYSIS SYSTEM (NRRAS)

PROGRAM MASTER PLAN (PMP)



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TRW
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WASHINGTON OPERATIONS

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SECTION 1. INTRODUCTION

1.1 Purpose. The purpose of this Program Master Plan (PMP) is to document the development approach for the Navy Readiness Reporting and Analysis System (NRRAS). It details the major activities of the plan under two alternatives:

- a. Alternative 1, steady state funding over a seven year period (FY-78-84);
- b. Alternative 2, accelerated time frame, five years (FY-78-82).

1.2 Scope. This PMP describes the management organization and responsibilities for NRRAS, under both alternatives with major annual development objectives, relevant milestones and significant scheduled events. The description of each year of both alternatives of the plan includes:

- a. A detailed description of the year's tasks;
- b. The major milestones associated with each task; and
- c. The cost of each task.

Revisions to the selected alternative (ultimate PMP) will occur as the work becomes more definitive.

1.3 NRRAS System Definition. NRRAS is a refinement of the NAVFORSTAT (Navy Force Status) reporting system which provides improved definition of unit status information, increased report standardization, and analysis information for management. It is composed of the following functions: system management, an analysis of the present system, interim improvements, long range improvements, integration into the Navy Reporting Structure (NRS) (formerly Composite Operations Reporting System (CORS)), Training and Test and Evaluation (T&E).

Readiness Reporting long range improvements will be implemented through the NRS.

1.4 Background. In the early evolution of reporting readiness Navy units reported in accordance with individual Fleet Commander-in-Chief (FLTCINC) requirements/instructions and reported directly to their respective CINC. In August 1973, OPNAVINST 3501.66 was promulgated which initiated and formalized the Navy Force Status report. With this instruction the NAVFORSTAT became the principle report within the Navy to provide the Chief of Naval Operations (CNO), the FLTCINCs and higher authority with operational status information concerning units/organizations. The instruction also implemented reporting in consonance with the Joint Reporting Structure (JRS) in compliance with Joint Chiefs of Staff (JCS) guidance.

In June 1975, the CNO promulgated CNO Objective Number 10 directing the development of a readiness reporting and analysis system. He stressed that the system existing at that time did not adequately provide resource and mission degradation data on which to base management decisions. It provided insufficient objectivity in reporting and did not provide feedback to the fleet. Further, he stated that the system did not provide platform and mission sponsors with adequate information on which to base resource allocations in the budget development process. In CNO Objective Number 10, he specifically addressed the following objectives:

"a. Improve the objectivity and accuracy of readiness degradation and reporting.

b. Provide the OPNAV and NAVMAT managers a more meaningful analysis of fleet readiness data for use in the budget formulation and review process."

For the past several years there has been comment, criticism, increased interest and in some cases, direction provided by Congress with regard to readiness. The Government Accounting Office (GAO) has submitted several reports regarding the review of readiness reporting. In December 1977, GAO noted that Navy had developed a long-range plan to revamp its system and that action had been taken to implement improvements. In March 1977, the Secretary of Defense promulgated the Defense Policy and Planning Guidance (DPPG). Therein he directed the improvement of the Department of Defense's (DOD) ability to define and measure readiness, and relate changes in resources to changes in experienced or projected readiness; and adjust the allocation of Defense resources to attain the desired levels of readiness. Following the DPPG, Congress in the DOD Appropriations Authorization Act of 1978 directed that: "The budget for DOD submitted to the Congress for FY-79 and subsequent fiscal years shall include data projecting the effect of the appropriations requested for material readiness requirements." Prior to the passage of the act, the Secretary of Defense informed Congress that the type of information required, "though now unobtainable, is clearly desired" and attempted to revise the applicable Section of the Act "to recognize the current state-of-the-art in readiness measurement and analysis with the understanding that I will report to Committees periodically on our progress toward acquiring the information we all desire". Subsequent to the passage of the Act, on 2 November 1977, the Secretary of Defense expanded the Congressional dictate beyond that of material readiness to include all factors influencing force readiness including personnel readiness.

Since distribution of OPNAVINST 3501.66, several revisions have been promulgated in order to address CNO's concerns and to refine the system. Further refinement continues along with close integration of readiness reporting into the NRS.

1.5 Document Organization. This document is organized as follows:

- a. Section 1 contains the introduction.
- b. Section 2 describes the overall development approach for the NRRAS for both alternatives.
- c. Section 3 describes the process for maintaining the PMP.
- d. Appendixes A and B contain the detailed description of the work for Alternatives 1 and 2 respectively.
- e. Appendix C contains NRRAS interdependency information relative to NRS.
- f. Appendix D contains information of the OP-643 billet structure.
- g. Appendix E contains a list of acronyms.

SECTION 2. NRRAS DEVELOPMENT

2.1 Goals and Objectives. The primary objective of the NRRAS is increased readiness through objective and accurate unit reporting and management analyses. In meeting this objective the system shall provide for: increased standardization of reports with improved definition of unit status information, and the conduct of analyses which will aid decision makers. All report improvements and redesign will be done in consonance with the NRS while satisfying the operational needs of the Navy and the National Command Authorities (NCA). In meeting this responsibility, NRRAS will be developed to achieve the following program goals:

- a. Simplify report preparation in order to assist the personnel originating the report.
- b. Increase objectivity.
- c. Establish standardized criteria for reporting.
- d. Provide quantifiable, objective data concerning unit operational readiness that accurately reflects unit capability and status within design limitations of the unit reported.
- e. Provide information supportive of Navy resource and operational decision processes.

2.2 Management Organization and Responsibilities. NRRAS management responsibilities are shown in Table 2-1.

Table 2-1. Management Responsibilities

Organization	Management Responsibilities
Deputy Chief of Naval Operations for Plans, Policy and Operations (OP-06)	Program Sponsor
Director, Fleet Operations Readiness and Navy Command Center Division (OP-64). (Action Officer: Head, Fleet Readiness and Capabilities OP-643E)	Program Coordinator
Assistant Vice Chief of Naval Operations (OP-09B)	Resource Sponsor

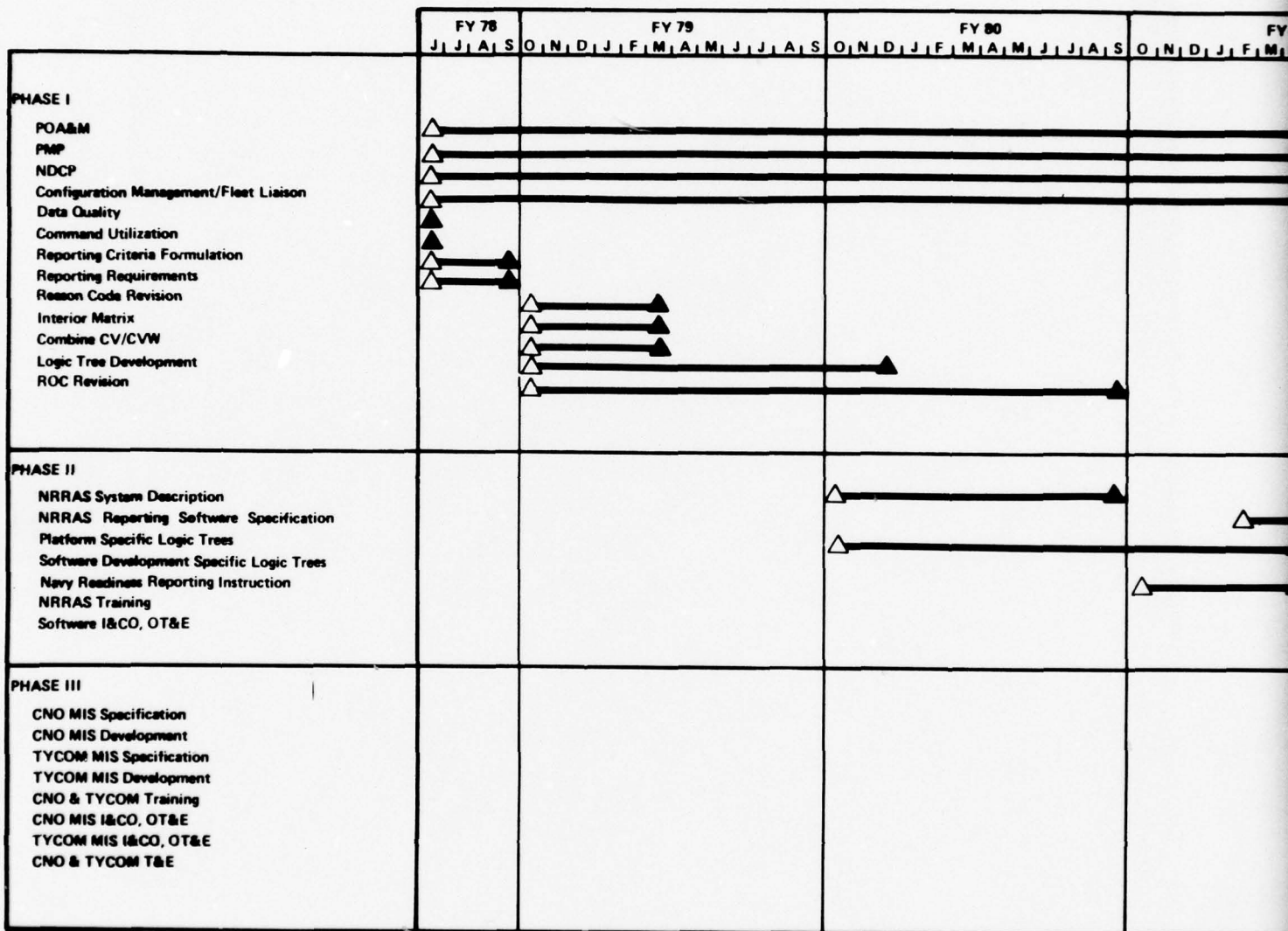
2.3 Milestones. Figures 2-1 and 2-2 present the two alternative Milestone Charts depicting the major tasks associated with NRRAS development. As perturbations to the System transpire, the selected alternative Milestone Chart will be amended. The Program Coordinator is responsible for organizing, planning, directing and controlling the NRRAS development. To that end, technical support will be provided by the FLTCINCs, the Navy Regional Data Automation Center (NARDAC) and the current contractor. The three phases in Figures 2-1 and 2-2 are: Phase I, Interim Improvement; Phase II, Reporting Refinement; and, Phase III, Management Information.

2.4 Work Breakdown Structure (WBS). The WBS for the NRRAS is shown in Figure 2-3. The WBS identifies all tasks associated with NRRAS.

2.5 Cost Resources. All program costs shown in Tables 2-2 and 2-3 are in 1978 dollars and are based on the Milestone Charts (Figures 2-1 and 2-2). The major funding categories are:

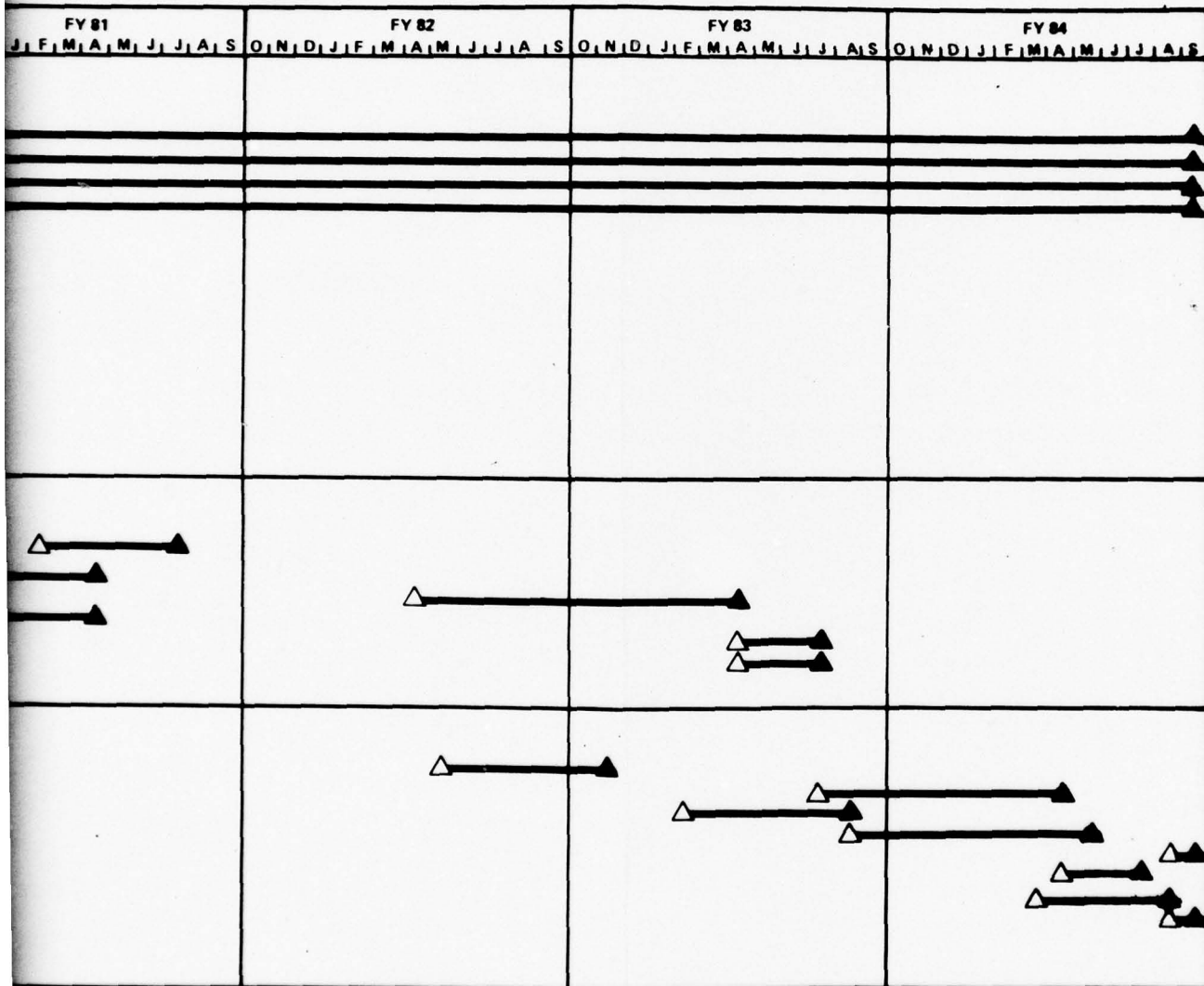
a. Research, Development, Test and Evaluation Funding, Navy (RDT&E,N). Cost estimates are those associated with rewriting the NAVFORSTAT Instruction funded under the NRS.

b. Operations and Maintenance Funding, Navy (O&M,N). Remaining cost estimates are incident to the entire NRRAS development. (Once the program is formalized, funding may come from another appropriation.)



Legend
 ▲ Task Start
 ▲ Task Completion

Figure 2-1. NRRAS Major Alternative



Major Milestones
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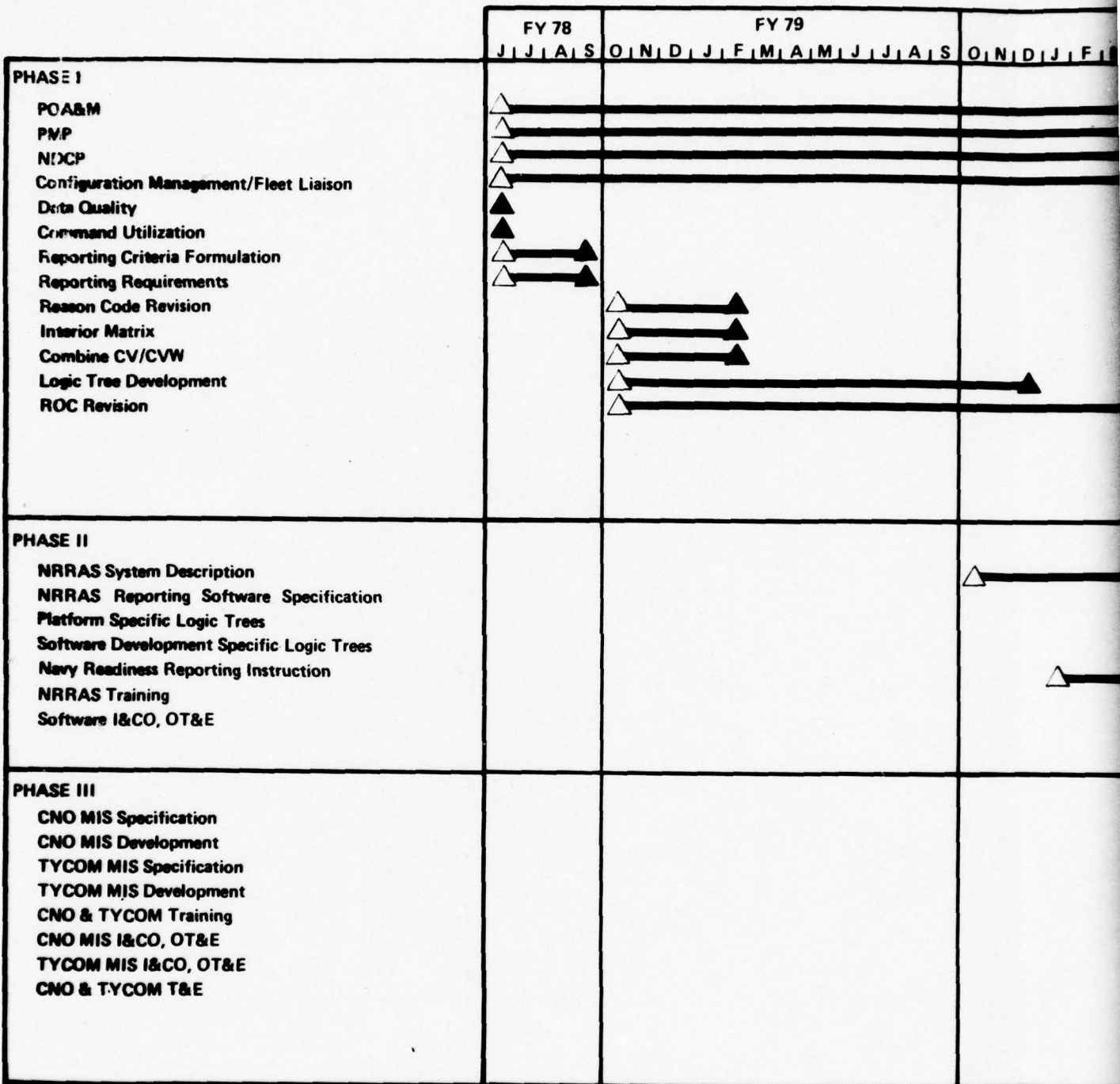
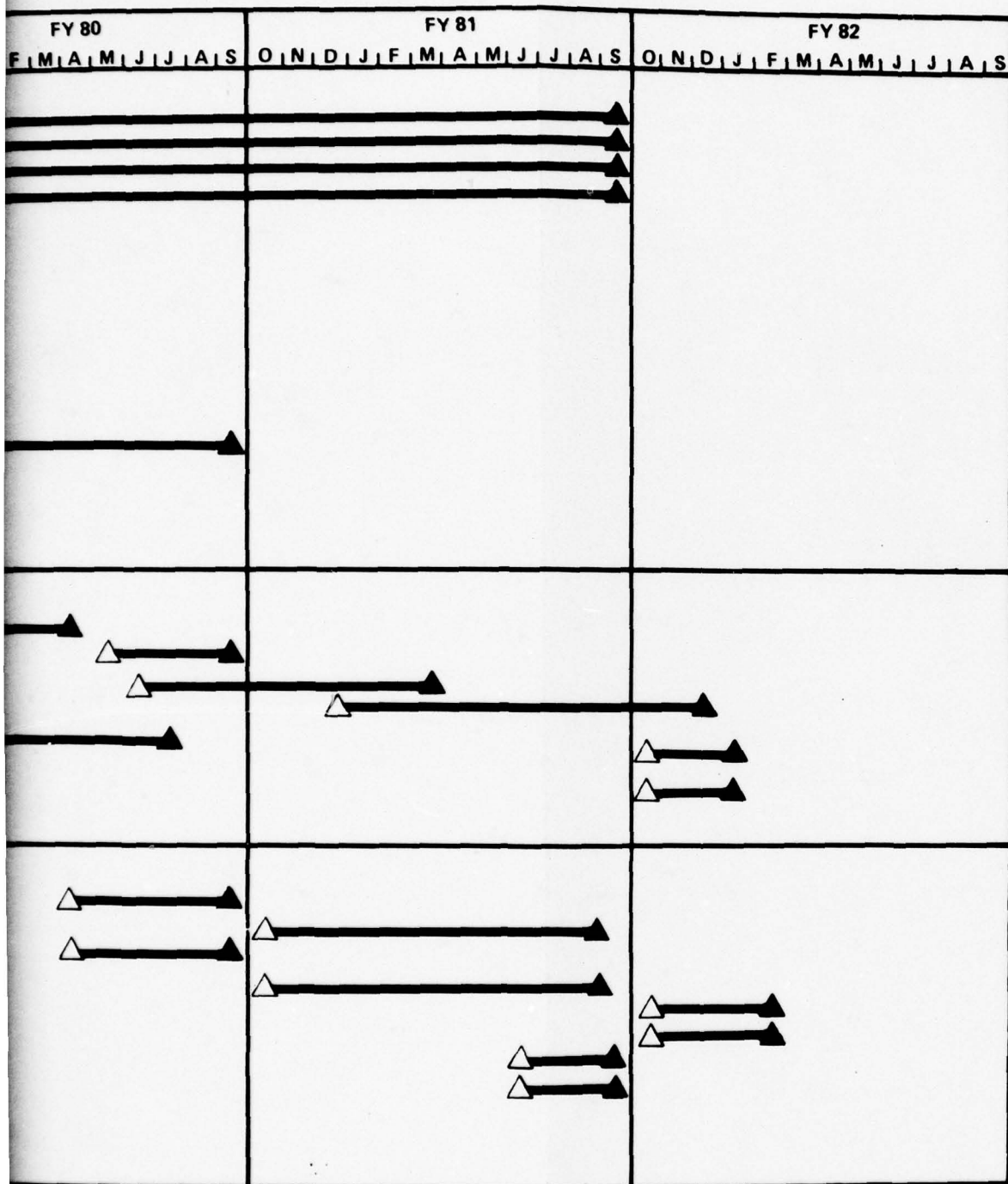


Figure 2-2. NRRAS Major Milestones
Alternative 2



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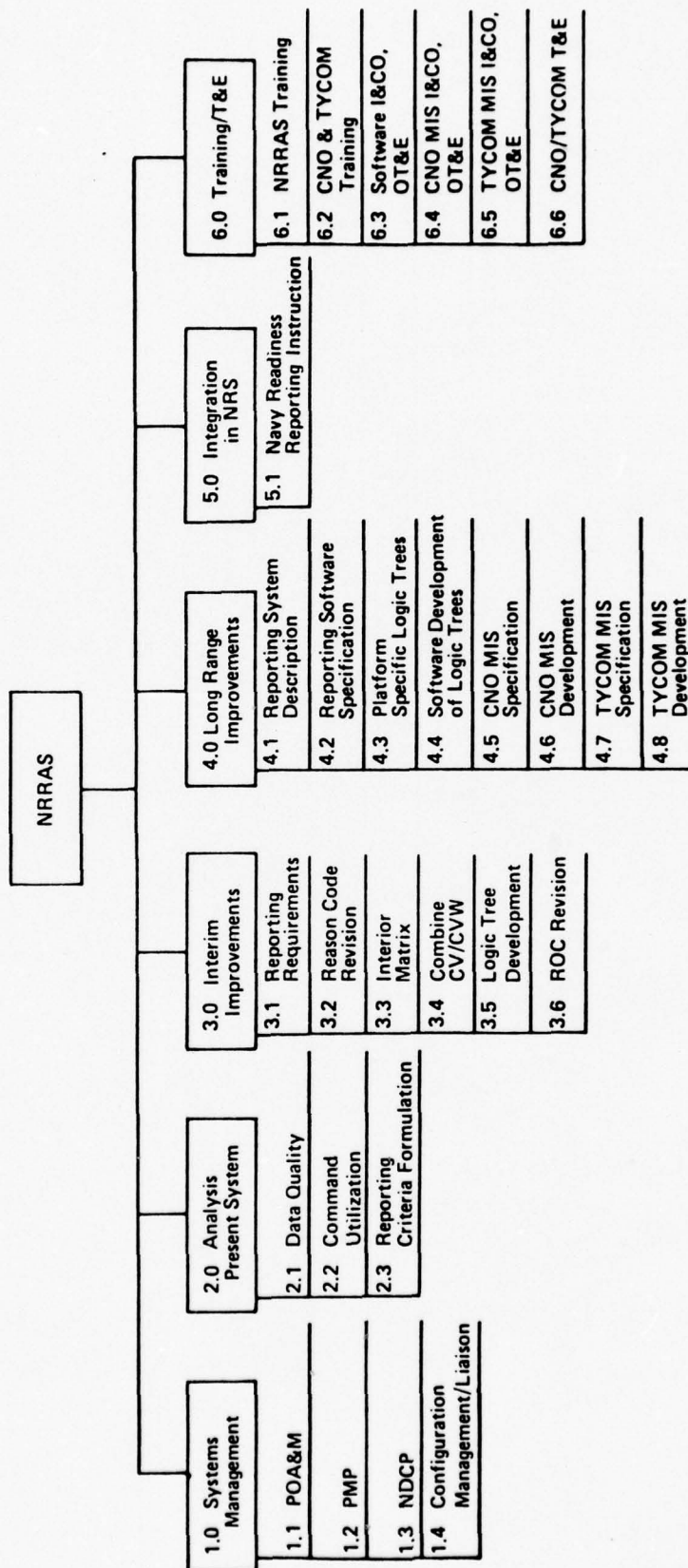


Figure 2-3. NRRAS Work Breakdown Structure

Table 2-2. FY-78-84 Costs
Alternative 1

APPROPRIATION	FY-78	FY-79	FY-80	FY-81	FY-82	FY-83	FY-84	TOTAL
O&M,N	81.3K	390.1K	390.0K	319.6K	319.7K	363.0K	406.4K	2,270.1K
RDT&E				130.0K*				130.0K*
Total	81.3K	390.1K	390.0K	319.6K*	319.7K	363.0K	406.4K	2,270.1K*

*\$130.0K is an RDT&E appropriation to NRS which is not totaled into the NRRAS costs

Table 2-3. FY-78-82 Costs
Alternative 2

APPROPRIATION	FY-78	FY-79	FY-80	FY-81	FY-82	TOTAL
O&M, N	81.3K	406.3K	736.7K	910.0K	162.5K	2,296.8K
RDT&E			130.0K*			130.0K*
Total	81.3K	406.3K	736.7K*	910.0K	162.5K	2,296.8K*

*\$130.0K is an RDT&E appropriation to NRS which is not totaled into the NRRAS costs

SECTION 3. REVISION

This PMP shall be revised after the selection of the desired alternative and at the start of each new fiscal year thereafter. The revision will delineate the current fiscal year's project management data. Any perturbation to the NRRAS Program will be reflected in subsequent yearly promulgations of this PMP.

APPENDIX A

ALTERNATIVE 1

APPENDIX A

ALTERNATIVE 1

Annexes 1-7 delineate the technical approach for Alternative 1
FY-78 through FY-84.

ANNEX 1

TECHNICAL APPROACH FY-78

A.1 Description of Tasks. The specific tasks that were proposed for accomplishment during FY-78 under Alternative 1 follow.

A.1.1 Task 1.1: Develop a Plan of Action and Milestones (POA&M) for Readiness Reporting Improvements. The effort required to redesign and modernize the readiness reporting system shall be scoped. The POA&M shall be revised annually if necessary. (This task was not undertaken.)

A.1.2 Task 1.2: Program Master Plan (PMP). A PMP shall be prepared for use by the Fleet Operations Readiness and Navy Command Center Division (OP-64) in NRRAS development. The plan will contain: management organization and action responsibilities; software actions in the NRS to implement Readiness reporting improvements; and, specification of major annual development objectives. The plan will be updated annually as necessary. (This task was completed.)

A.1.3 Task 1.3: Develop a Navy Decision Coordinating Paper (NDCP) for Readiness. An NDCP shall be developed to formally document the existing Readiness Reporting System and to promulgate a CNO decision to expand the scope of the program under the title of NRRAS. The NDCP will be updated annually if perturbations occur. (This task was not undertaken.)

A.1.4 Task 1.4: Configuration Management/Fleet Liaison. Liaison shall be maintained between OP-643, fleet units, and staffs and commands involved in the use and origination of readiness reports. The task includes preparation for, conduct and documentation of meetings and conferences required during the year and overall coordination to effect proper configuration of the system. (This task was not undertaken.)

A.1.5 Task 2.1: Data Quality Analysis. Analyses shall be conducted to determine the consistency of the reported readiness data in order to isolate problem areas and identify recommended procedures for improving the criteria for readiness reporting. (This task was completed.)

A.1.6 Task 2.2: Command Utilization Analysis. The use of readiness information by each echelon of command, (i.e., CNO, FLTCINCs, Type Commander (TYCOMs)) shall be evaluated through fleet liaison. Also, the validity and utility of reported data in supporting the functions of the various echelons of command shall be evaluated. (This task was completed.)

A.1.7 Task 2.3: Reporting Criteria Formulation. Criteria for revising reporting procedures shall be developed based on the results of Tasks 2.1 and 2.2. (This task was not undertaken.)

A.1.8 Task 3.1: Reporting Requirements. Reporting requirements shall be developed for improving the present system based on the results of Task 2.3. This task is interdependent with NRS.

A.1.9 Milestones. The major milestones associated with the FY-78 tasks are shown in Figure A-1. All of these tasks, except Tasks 1.1, 1.2, 1.3 and 1.4 will be completed in FY-78.

A.1.10 FY-78 Costs. Table A-1 contains the costs of the FY-78 tasks. The costs are based upon FY-78 dollar values.

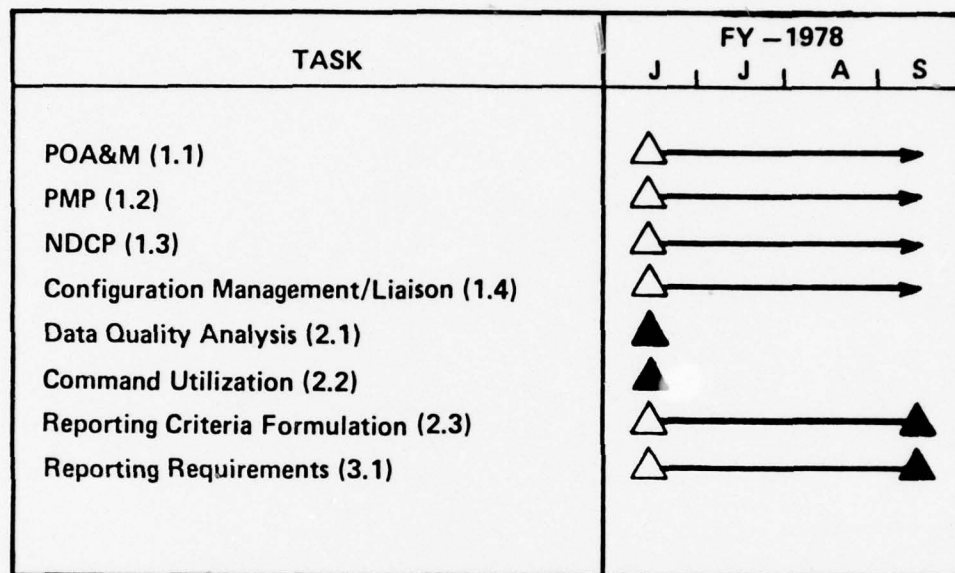


Figure A-1. NRRAS Major Milestones FY-78

ANNEX 2

TECHNICAL APPROACH FY-79

A.2 Description of Tasks. The following tasks did not reach completion in FY-78 and will continue into FY-79.

- a. Task 1.1: POA&M.
- b. Task 1.2: PMP.
- c. Task 1.3: NDCP.
- d. Task 1.4: Configuration Management/Fleet Liaison.

In addition to a continuation of the above tasks, work will commence on five new tasks in FY-79. The new tasks in FY-79 are all related to interim improvements to the system. The new FY-79 tasks are described in the following paragraphs.

A.2.1 Task 3.2: Reason Code Revision. The reason codes shall be modified to provide a better and more thorough understanding of resource code degradation. This task is interdependent with the NRS.

A.2.2 Task 3.3: Interior Matrix Description. The interior matrix description shall consist of incorporating the entire resource area/mission area matrix into the reporting system to provide a greater understanding of resource/mission degradation. This task is interdependent with the NRS.

A.2.3 Task 3.4: Combine Carrier/Carrier Air Wing (CV/CVW) Reporting Assessment. An assessment shall be made of combining a CV and its embarked CVW reports into one report for potential improved readiness indicators. If the assessment indicates feasibility, a recommendation for system utilization will be made. If the recommendation is made, the task will become interdependent with the NRS.

A.2.4 Task 3.5: Logic Tree Development. General logic trees for mission/resource areas for Naval Air Force Carriers (NAVAIRFOR (CV)), Naval Air Force Squadrons (NAVAIRFOR (SQD)), Naval Submarine Force (NAVSUBFOR), and Naval Surface Force (NAVSURFOR) shall be developed.

A.2.5 Task 3.6: Required Operational Capability (ROC) Revision. The ROC (assigned mission areas) for all units reporting in the system shall be reviewed and revised to ensure completeness/accuracy for reporting unit capabilities. This task is interdependent with the NRS and is key to the long range improvements.

A.2.6 Milestones. The milestones presented in Figure A-2 reflect the tasks which are continued from FY-78 and the five new tasks which commence in FY-79. It may become necessary to modify these tasks for FY-79 in light of funding or other external influences. The schedule in Figure A-2 would be adjusted accordingly, if necessary. All of these tasks except the continuing tasks from FY-78 (Tasks 1.1, 1.2, 1.3 and 1.4) and Tasks 3.5 and 3.6 will be completed in FY-79.

A.2.7 FY-79 Costs. Table A-2 contains the costs for the tasks continued from FY-78 as well as the five new FY-79 tasks.

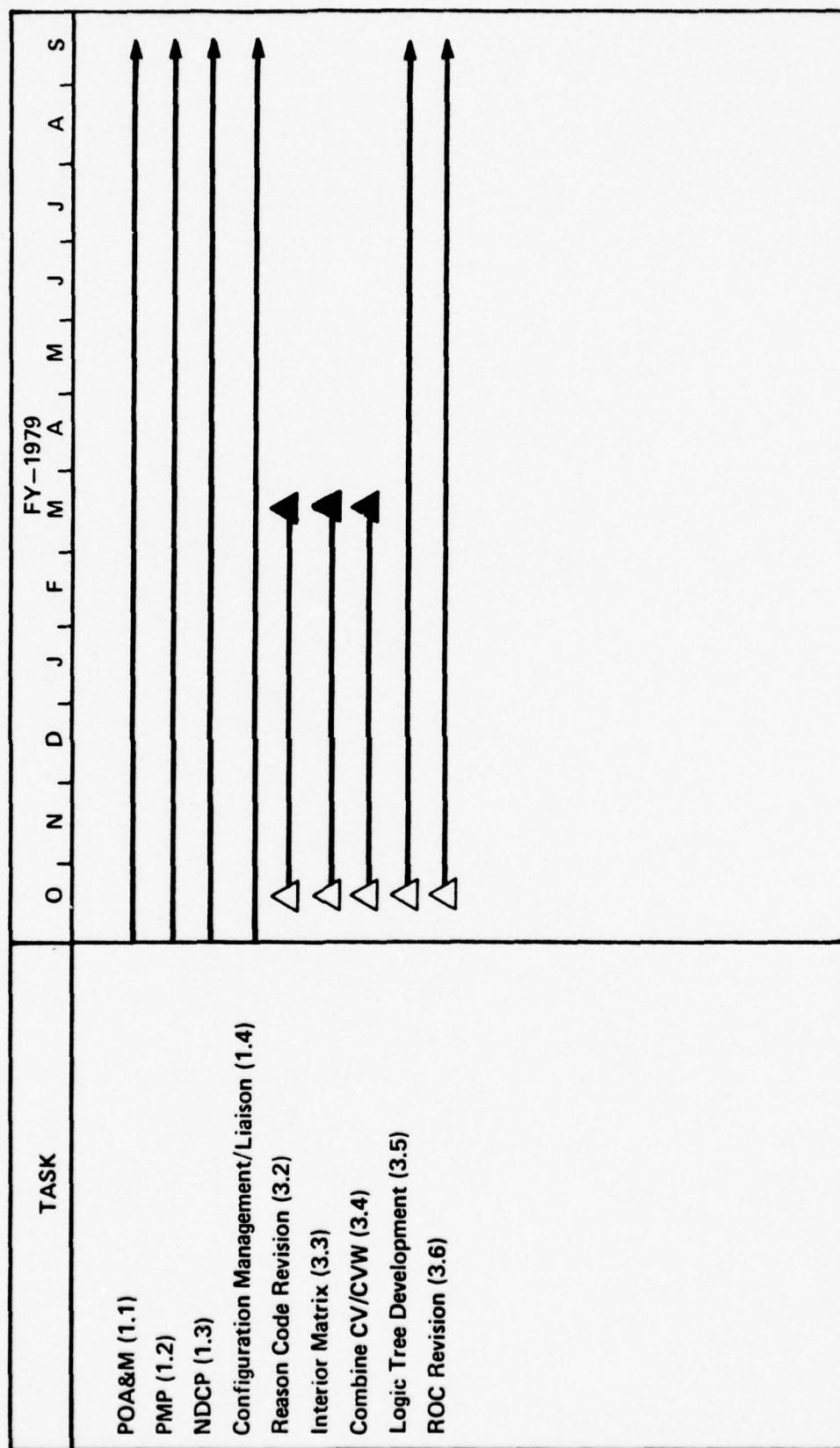


Figure A-2. NRRAS Major Milestones FY-79

Table A-2. FY-79 Costs By Task

TASK	O&M,N
POA & M (1.1)	12.2K
PMP (1.2)	12.2K
NDCP (1.3)	12.2K
Configuration Management/Fleet Liaison (1.4)	12.2K
Reason Code Revision (3.2)	27.1K
Interior Matrix (3.3)	27.1K
Combine CV/CVW (3.4)	27.1K
Logic Tree Development (3.5)	130.0K
ROC Revision (3.6)	130.0K
FY-1979 Total Cost	390.1K

ANNEX 3

TECHNICAL APPROACH FY-80

A.3 Description of Tasks. The following tasks will not reach completion in FY-79 and will continue into FY-80.

- a. Task 1.1: POA&M
- b. Task 1.2: PMP.
- c. Task 1.3: NDCP.
- d. Task 1.4: Configuration Management/Fleet Liaison.
- e. Task 3.5: Logic Tree Development.
- f. Task 3.6: ROC Revision.

In addition to a continuation of the above tasks, work will commence on one new task in FY-80. The new task in FY-80 is related to long range improvements. The new FY-80 task is described in the following paragraph.

A.3.1 Task 4.1: NRRAS System Description. A NRRAS System Description shall be prepared in accordance with NRRAS program objectives. This description shall establish the requirements which must be satisfied by the system.

A.3.2 Milestones. The milestones presented in Figure A-3 reflect the tasks which are continued from FY-79 and the new task which commences in FY-80. The continuing tasks from FY-79 (Tasks 1.1, 1.2, 1.3, and 1.4, less 3.5) will continue into FY-81. Tasks 3.5, 3.6, and 4.1 will be completed during FY-80.

A.3.3 FY-80 Costs. Table A-3 contains the costs for the tasks continued from FY-79 as well as the new FY-80 task.

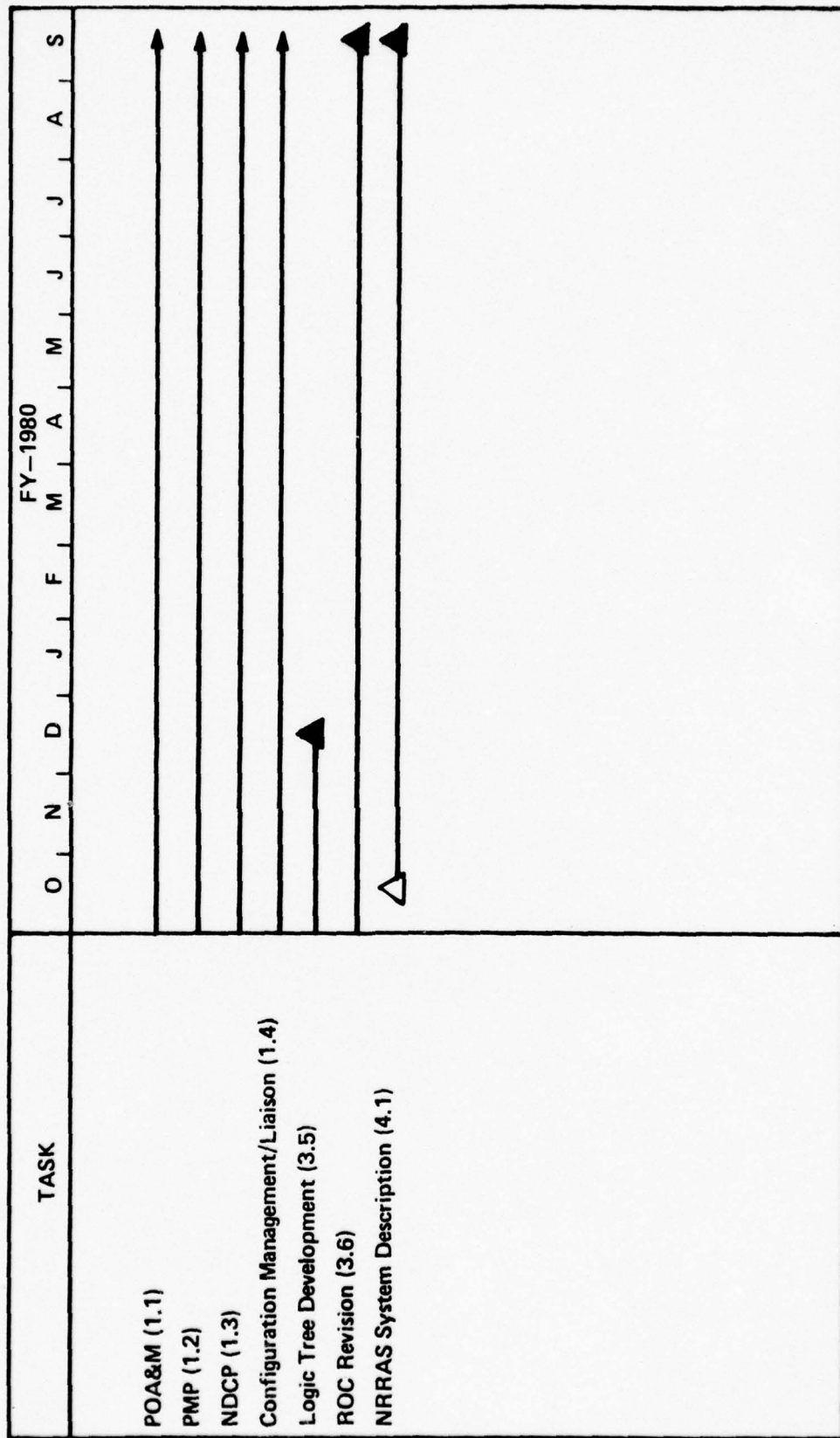


Figure A-3. NRRAS Major Milestones FY-80

Table A-3. FY-80 Costs By Task

TASK	O&M,N
POA & M (1.1)	8.1K
PMP (1.2)	8.1K
NDCP (1.3)	8.1K
Configuration Management/Fleet Liaison(1.4)	8.1K
Logic Tree Development (3.5)	32.5K
ROC Revision (3.6)	130.0K
NRRAS System Description (4.1)	195.1K
FY-1980 Total Cost	390.0K

ANNEX 4

TECHNICAL APPROACH FY-81

A.4 Description of Tasks. The following tasks will not reach completion in FY-80 and will continue into FY-81.

- a. Task 1.1: POA&M.
- b. Task 1.2: PMP.
- c. Task 1.3: NDCP.
- d. Task 1.4: Configuration Management/Fleet Liaison.

In addition to a continuation of the above tasks, work will commence on three new tasks in FY-81. The new tasks in FY-81 are related to integration in NRS and long range improvements to the system. The new FY-81 tasks are described in the following paragraphs.

A.4.1 Task 4.2: NRRAS Software Specification. A software specification shall be prepared which contains functional performance and interface requirements for the system based on the results of Task 4.1, NRRAS System Description.

A.4.2 Task 4.3: Platform Specific Logic Trees. To increase standardization and objectivity platform specific logic trees shall be developed.

A.4.3 Task 5.1: Navy Readiness Reporting Instruction. The NAVFORSTAT instruction shall be revised in order to fully integrate the NRRAS into the NRS and to accommodate all changes resulting from the various tasks within this PMP.

A.4.4 Milestones. The milestones presented in Figure A-4 reflect the tasks which are continued from FY-80 and the three new tasks which commence in FY-81. All of the continuing tasks will continue into FY-82. Two of the new tasks will be completed during FY-81.

A.4.5 FY-81 Costs. Table A-4 contains the costs for the tasks continued from FY-80 as well as the three new tasks in FY-81.

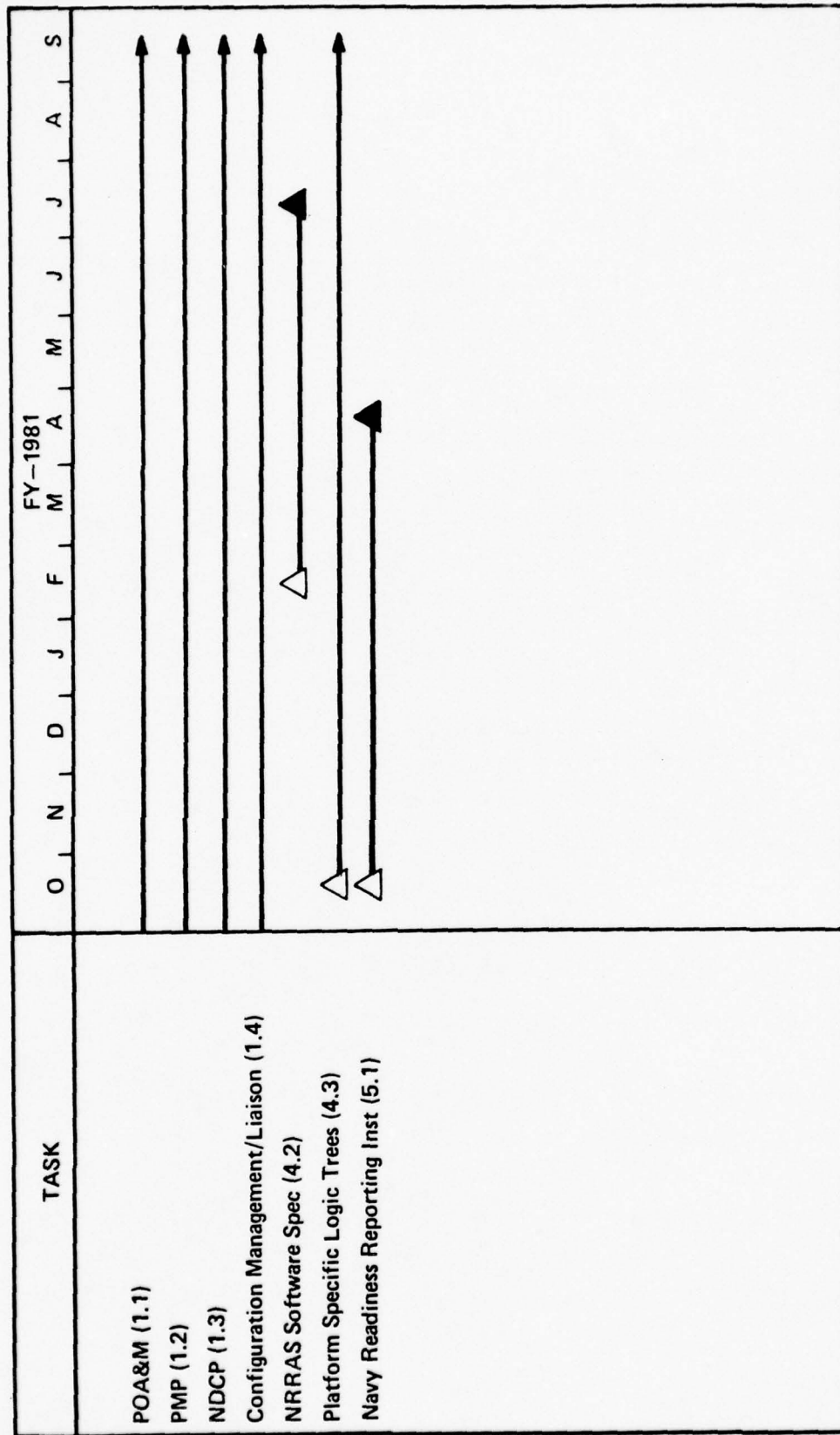


Figure A-4. NRRAS Major Milestones FY-81

Table A-4. FY-81 Costs By Task

TASK	O&M,N	RDT&E
POA&M (1.1)	4.075K	130.K*
PMP (1.2)	4.075K	
NDCP (1.3)	4.075K	
Configuration Management/Fleet Liaison (1.4)	4.075K	
NRRAS Software Specification (4.2)	65.0K	
Platform Specific Logic Trees (4.3)	238.3K	
Navy Readiness Reporting Instruction (5.1)		
FY-1981 Total Cost	319.6K	130.0K*

*Not included in NRRAS costs

ANNEX 5

TECHNICAL APPROACH FY-82

A.5 Description of Tasks. The following tasks will not reach completion in FY-81 and will continue into FY-82.

- a. Task 1.1: POA&M.
- b. Task 1.2: PMP.
- c. Task 1.3: NDCP.
- d. Task 1.4: Configuration Management/Fleet Liaison.
- e. Task 4.3: Platform Specific Logic Trees.

In addition to a continuation of the above tasks, work will commence on two new tasks in FY-82. The new tasks in FY-82 are related to long range improvements to the system. The new FY-82 tasks are described in the following paragraphs.

A.5.1 Task 4.4: Software Development of Logic Trees. Software shall be written to incorporate the logic trees into the system at the point of origination, based on the results of Task 4.3.

A.5.2 Task 4.5: CNO Management Information System (MIS) Specification. A management information system specification shall be prepared to establish the requirements for deriving analytical information for management decisions.

A.5.3 Milestones. The milestones presented in Figure A-5 reflect the tasks which are continued from FY-81 and the two new tasks which commence in FY-82. All of the tasks except Task 4.3 will be continued into FY-83.

A.5.4 FY-82 Costs. Table A-5 contains the costs for the tasks continued from FY-81 as well as the two new tasks in FY-82.

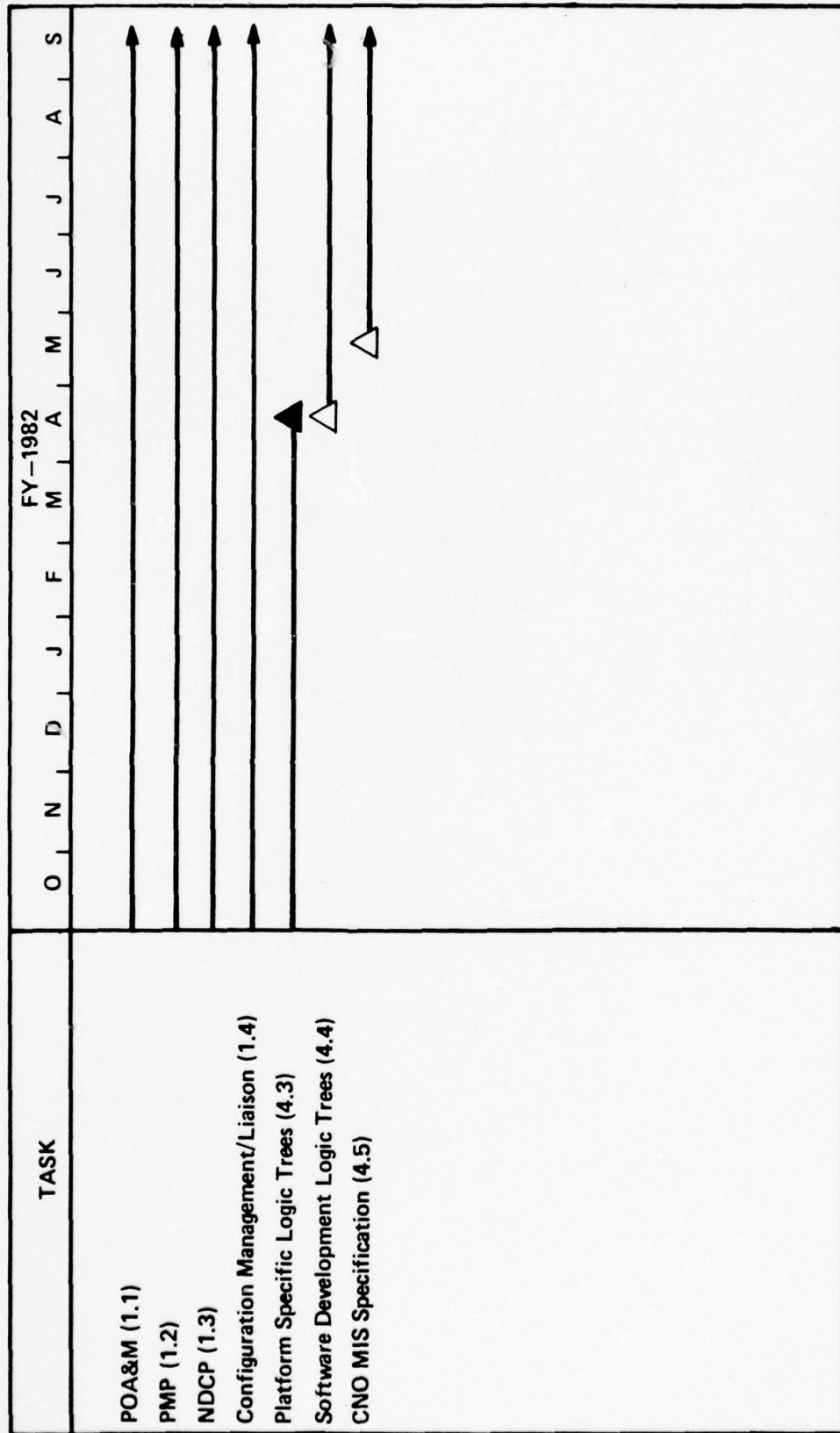


Figure A-5. NRRAS Major Milestones FY-82

Table A-5. FY-82 Costs By Task

TASK	COST
POA&M (1.1)	4.075K
PMP (1.2)	4.075K
NDCP (1.3)	4.075K
Configuration Management /Liaison (1.4)	4.075K
Platform Specific Logic Trees (4.3)	151.7K
Software Development Logic Trees (4.4)	97.5K
CNO MIS Specification (4.5)	54.2K
FY-1982 Total Cost	319.7K

ANNEX 6

TECHNICAL APPROACH FY-83

A.6 Description of Tasks. The following tasks will not reach completion in FY-82 and will continue into FY-83.

- a. Task 1.1: POA&M.
- b. Task 1.2: PMP.
- c. Task 1.3: NDCP.
- d. Task 1.4: Configuration Management/Fleet Liaison.
- e. Task 4.4: Software Development of Logic Trees.
- f. Task 4.5: CNO MIS Specification.

In addition to the continuation of the above tasks, work will commence on five new tasks in FY-83. The new tasks in FY-83 are related to long range improvements, training and test and evaluation. The new FY-83 tasks are described in the following paragraphs.

A.6.1 Task 4.6: CNO MIS Development. This task shall consist of fulfilling the requirements set forth in Task 4.5, CNO MIS Specification.

A.6.2 Task 4.7: TYCOM MIS Specification. A management information system specification shall be prepared to establish the requirements for deriving the analytical information for management decisions.

A.6.3 Task 4.8: TYCOM MIS Development. This task shall consist of fulfilling the requirements set forth in Task 4.7 above.

A.6.4 Task 6.1: NRRAS Training. This training shall be at the working level to provide an understanding of the mechanics of the system and to promote proper performance by originators/technicians.

A.6.5 Task 6.3: Software Installation and Check Out (I&CO), Operational Test and Evaluation (OT&E). This task encompasses the I&CO of the software along with an analysis through OT&E to determine that the specified software requirements are satisfied.

A.6.6 Milestones. The milestones presented in Figure A-6 reflect the tasks which are continued from FY-82 and the five new tasks which commence in FY-83. Tasks 4.4, 4.5, 4.7, 6.1 and 6.3 will be completed in FY-83. The remaining tasks (Task 1.1, 1.2, 1.3, 1.4, 4.6 and 4.8) will continue into FY-84.

A.6.7 FY-83 Costs. Table A-6 contains the costs for the tasks continued from FY-82 as well as the five new tasks in FY-83.

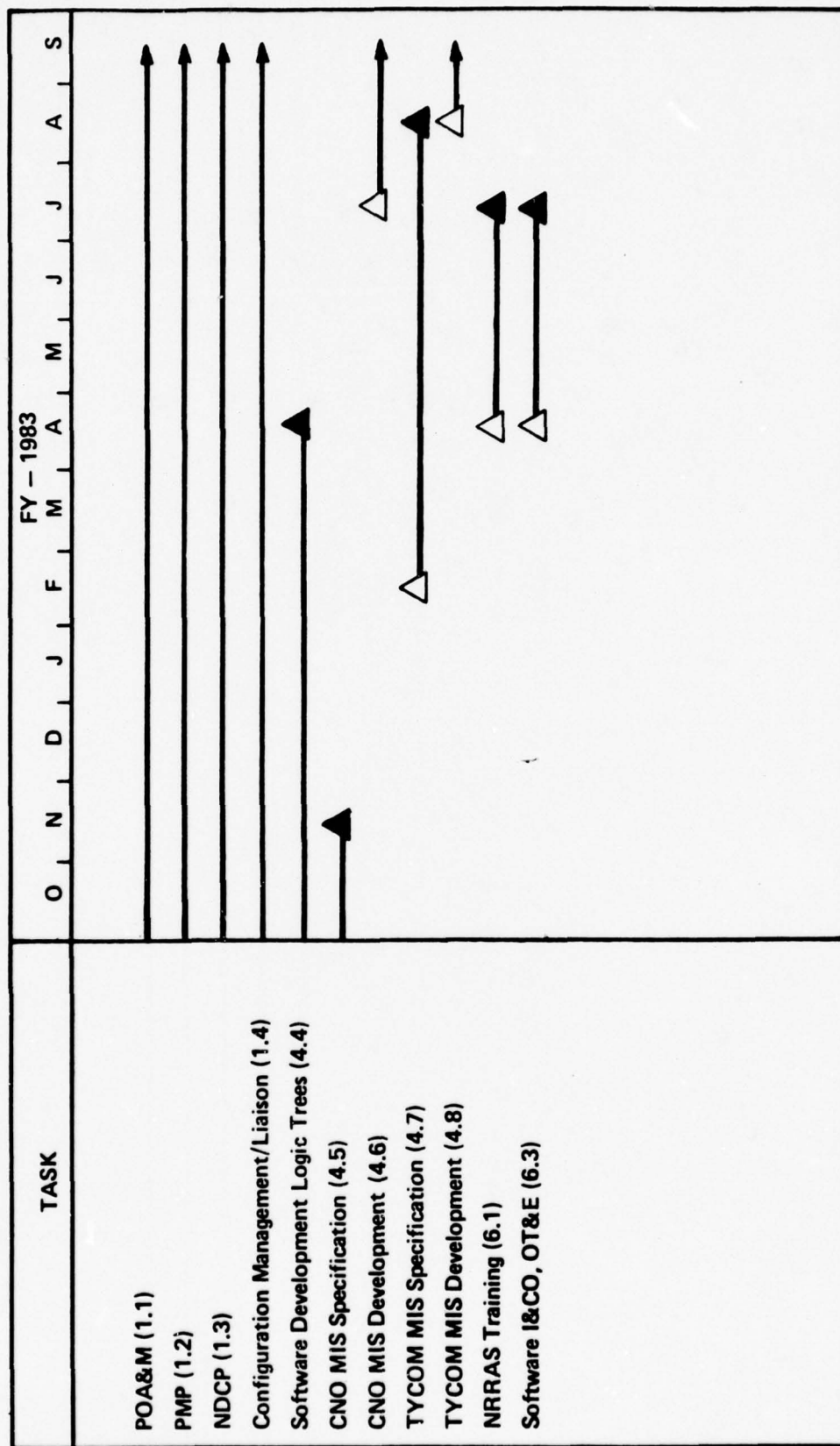


Figure A-6. NRRAS Major Milestones FY-83

Table A-6. FY-83 Costs By Task

TASK	O&M,N
POA & M (1.1)	4.075K
PMP (1.2)	4.075K
NDCP (1.3)	4.075K
Configuration Management/Fleet Liaison (1.4)	4.075K
Software Development Logic Trees (4.4)	97.6K
CNO MIS Specification (4.5)	10.8K
CNO MIS Development (4.6)	65.0K
TYCOM MIS Specification (4.7)	65.0K
TYCOM MIS Development (4.8)	43.3K
NRRAS Training (6.1)	32.5K
Software I&CO, OT&E (6.3)	32.5K
TY-1983 Total Cost	363.0K

ANNEX 7

TECHNICAL APPROACH FY-84

A.7 Description of Tasks. The following tasks will not reach completion in FY-83 and will continue into FY-84.

- a. Task 1.1: POA&M.
- b. Task 1.2: PMP.
- c. Task 1.3: NDCP.
- d. Task 1.4: Configuration Management/Fleet Liaison.
- e. Task 4.6: CNO MIS Development.
- f. Task 4.8: TYCOM MIS Development.

In addition to the continuation of the above tasks, work will commence on four new tasks in FY-84. The new tasks are all related to training and test and evaluation. The new FY-84 tasks are described in the following paragraphs.

A.7.1 Task 6.2: CNO and TYCOM Training. This training will be at the highest levels possible within OPNAV, the Navy Material Command and TYCOMs in order to ensure an understanding of the new system and the information that can be obtained therefrom.

A.7.2 Task 6.4: CNO MIS I&CO, OT&E. This task encompasses the I&CO of the CNO MIS along with an analysis through OT&E to determine that the specified MIS requirements are satisfied.

A.7.3 Task 6.5: TYCOM MIS I&CO, OT&E. This task encompasses the I&CO of the TYCOM MIS along with an analysis through OT&E to determine that the specified MIS requirements are satisfied.

A.7.4 Task 6.6: CNO and TYCOM T&E. Following completion of the I&CO, NRRAS shall undergo a development Test and Evaluation (T&E) to determine the effectiveness of the reporting system. The system output shall be analyzed to determine that the analytical results will assist management in the decision making process.

A.7.5 Milestones. The milestones in Figure A-7 reflect the tasks which are continued from FY-83 and the four new tasks which commence in FY-84. All tasks will have been completed by end of FY-84.

A.7.6 FY-84 Costs. Table A-7 contains the costs for the tasks continued from FY-83 as well as the four new tasks in FY-84.

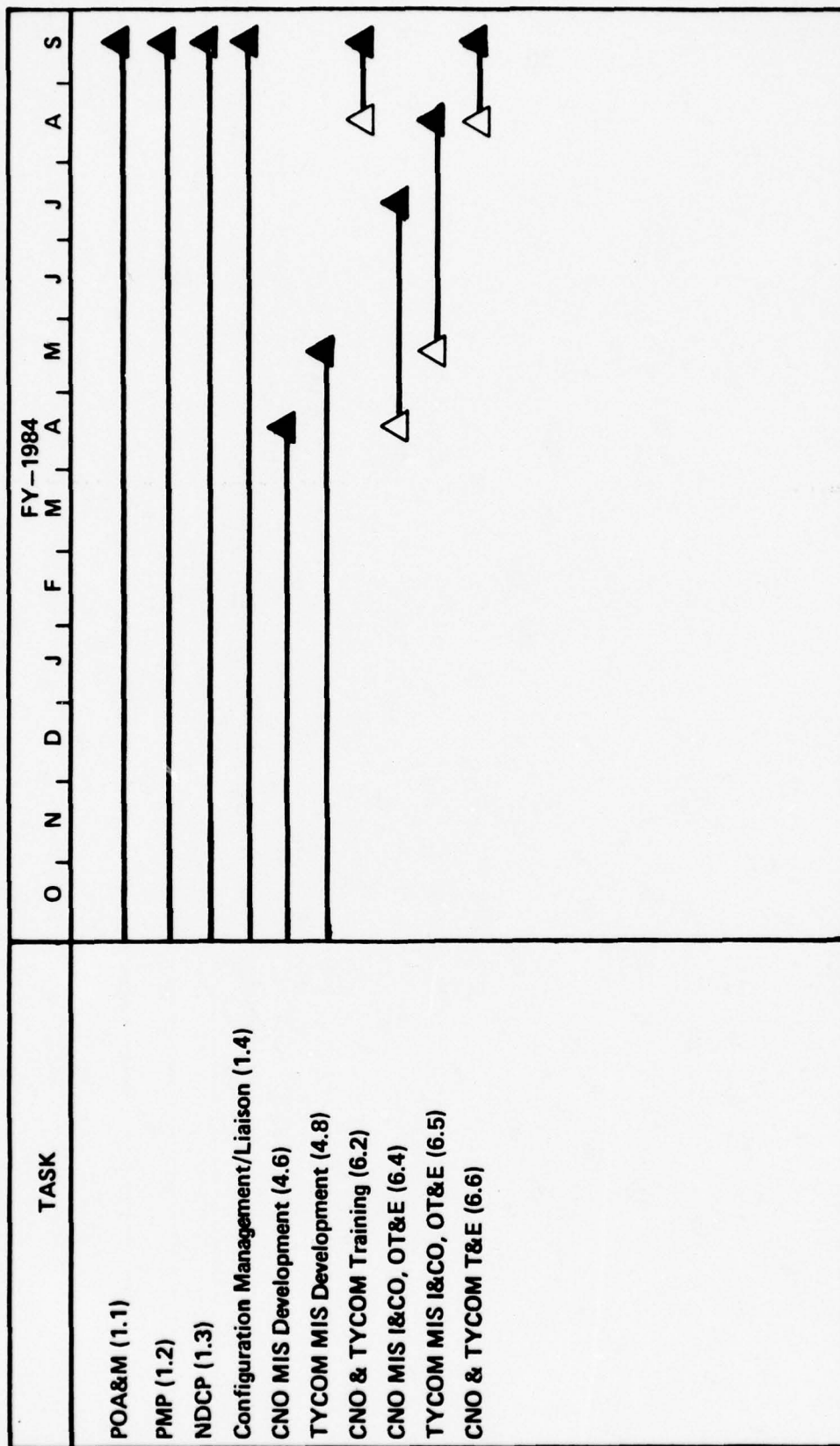


Figure A-7. NRRAS Major Milestones FY-84

Table A-7. FY-84 Costs By Task

TASK	O&M,N
POA & M (1.1)	4.075K
PMP (1.2)	4.075K
NDCP (1.3)	4.075K
Configuration Management/Fleet Liaison (1.4)	4.075K
CNO MIS Development (4.6)	130.0K
TYCOM MIS Development (4.8)	151.7K
CNO & TYCOM Training (6.2)	21.7K
CNO MIS I&CO, OT&E (6.4)	32.5K
TYCOM MIS I&CO, OT&E (6.5)	32.5K
CNO & TYCOM T&E (6.6)	21.7K
FY-1984 Total Cost	406.4K

APPENDIX B

ALTERNATIVE 2

APPENDIX B

ALTERNATIVE 2

Annexes 1-5 discuss the technical approach for Alternative 2 for FY-78 through FY-82.

ANNEX 1

TECHNICAL APPROACH FY-78

B.1 Description of Tasks. The specific tasks that were proposed for accomplishment during FY-78 under Alternative 2 follow.

B.1.1 Task 1.1: Develop a Plan of Action and Milestones (POA&M) for Readiness Reporting Improvements. The effort required to redesign and modernize the readiness reporting system shall be scoped. The POA&M shall be revised annually if necessary. (This task was not undertaken.)

B.1.2 Task 1.2: Program Master Plan (PMP). A PMP shall be prepared for use by the Fleet Operations Readiness and Navy Command Center Division (OP-64) in NRRAS development. The plan will contain: management organization and action responsibilities; software actions in the NRS to implement Readiness reporting improvements; and, specification of major annual development objectives. The plan will be updated annually as necessary. (This task was completed.)

B.1.3 Task 1.3: Develop a Navy Decision Coordinating Paper (NDCP) for Readiness. An NDCP shall be developed to formally document the existing Readiness Reporting System and to promulgate a CNO decision to expand the scope of the program under the title of NRRAS. The NDCP will be updated annually if perturbations occur. (This task was not undertaken.)

B.1.4 Task 1.4: Configuration Management/Fleet Liaison. Liaison shall be maintained between OP-643, fleet units, and staffs and commands involved in the use and origination of readiness reports. The task includes preparation for, conduct and documentation of meetings and conferences required during the year and overall coordination to effect proper configuration of the system. (This task was not undertaken.)

B.1.5 Task 2.1: Data Quality Analysis. Analyses shall be conducted to determine the consistency of the reported readiness data in order to isolate problem areas and identify recommended procedures for improving the criteria for readiness reporting. (This task was completed.)

B.1.6 Task 2.2: Command Utilization Analysis. The use of readiness information by each echelon of command, (i.e., CNO, FLTCINCs, Type Commander (TYCOMs)) shall be evaluated through fleet liaison. Also, the validity and utility of reported data in supporting the functions of the various echelons of command shall be evaluated. (This task was completed.)

B.1.7 Task 2.3: Reporting Criteria Formulation. Criteria for revising reporting procedures shall be developed based on the results of Tasks 2.1 and 2.2. (This task was not undertaken.)

B.1.8 Task 3.1: Reporting Requirements. Reporting requirements shall be developed for improving the present system based on the results of Task 2.3. This task is interdependent with NRS. (This task was not undertaken.)

B.1.9 Milestones. The major milestones associated with the FY-78 tasks are shown in Figure B-1. All of these tasks, except Tasks 1.1, 1.2, 1.3 and 1.4 will be completed in FY-78. (See Figure B-1.)

B.1.10 FY-78 Costs. Table B-1 contains the costs of the FY-78 tasks. The costs are based upon FY-78 dollar values.

TASK	FY - 1978			
	J	J	A	S
POA&M (1.1)	△	→	→	→
PMP (1.2)	△	→	→	→
NDCP (1.3)	△	→	→	→
Configuration Management/Fleet Liaison (1.4)	△	→	→	→
Data Quality Analysis (2.1)	▲			
Command Utilization (2.2)	▲			
Reporting Criteria Formulation (2.3)	△	→	→	▲
Reporting Requirements (3.1)	△	→	→	▲

Figure B-1. NRRAS Major Milestones FY-78

Table B-1. FY-78 Costs By Task

TASK	O&M,N
POA & M (1.1)	4.075K
PMP (1.2)	4.075K
NDCP (1.3)	4.075K
Configuration Management/Fleet Liaison (1.4)	4.075K
Reporting Criteria Formulation (2.3)	32.5K
Reporting Requirements (3.1)	32.5K
FY-1978 Total Cost	81.3K

ANNEX 2

TECHNICAL APPROACH FY-79

B.2 Description of Tasks. The following tasks did not reach completion in FY-78 and will continue into FY-79.

- a. Task 1.1: POA&M.
- b. Task 1.2: PMP.
- c. Task 1.3: NDCP.
- d. Task 1.4: Configuration Management/Fleet Liaison.

In addition to a continuation of the above tasks, work will commence on five new tasks in FY-79. The new tasks in FY-79 are all related to interim improvements to the system. The new FY-79 tasks are described in the following paragraphs.

B.2.1 Task 3.2: Reason Code Revision. The reason codes shall be modified to provide a better and more thorough understanding of resource code degradation. This task is interdependent with the NRS.

B.2.2 Task 3.3: Interior Matrix Description. The interior matrix description shall consist of incorporating the entire resource area/mission area matrix into the reporting system to provide a greater understanding of resource/mission degradation. This task is interdependent with the NRS.

B.2.3 Task 3.4: Combine Carrier/Carrier Air Wing (CV/CVW) Reporting Assessment. An assessment shall be made of combining a CV and its embarked CVW reports into one report for potential improved readiness indicators. If the assessment indicates feasibility, a recommendation for system utilization will be made. If the recommendation is made, the task will become interdependent with the NRS.

B.2.4 Task 3.5: Logic Tree Development. General logic trees for mission/resource areas for Naval Air Force Carriers (NAVAIRFOR (CV)), Naval Air Force Squadrons (NAVAIRFOR (SQD)), Naval Submarine Force (NAVSUBFOR), and Naval Surface Force (NAVSURFOR) shall be developed.

B.2.5 Task 3.6: Required Operational Capability (ROC) Revision. The ROC (assigned mission areas) for all units reporting in the system shall be reviewed and revised to ensure completeness/accuracy for reporting unit capabilities. This task is interdependent with the NRS and is key to the long range improvements.

B.2.6 Milestones. The milestones presented in Figure B-2 reflect the tasks which are continued from FY-78 and the five new tasks which commence in FY-79. It may become necessary to modify these tasks for FY-79 in light of funding or other external influences. The schedule in Figure B-2 would be adjusted accordingly, if necessary. All of these tasks except the continuing tasks for FY-78 (Tasks 1.1, 1.2, 1.3 and 1.4) and Tasks 3.5 and 3.6 will be completed in FY-79.

B.2.7 FY-79 Costs. Table B-2 contains the costs for the tasks continued from FY-78 as well as the five new FY-79 tasks.

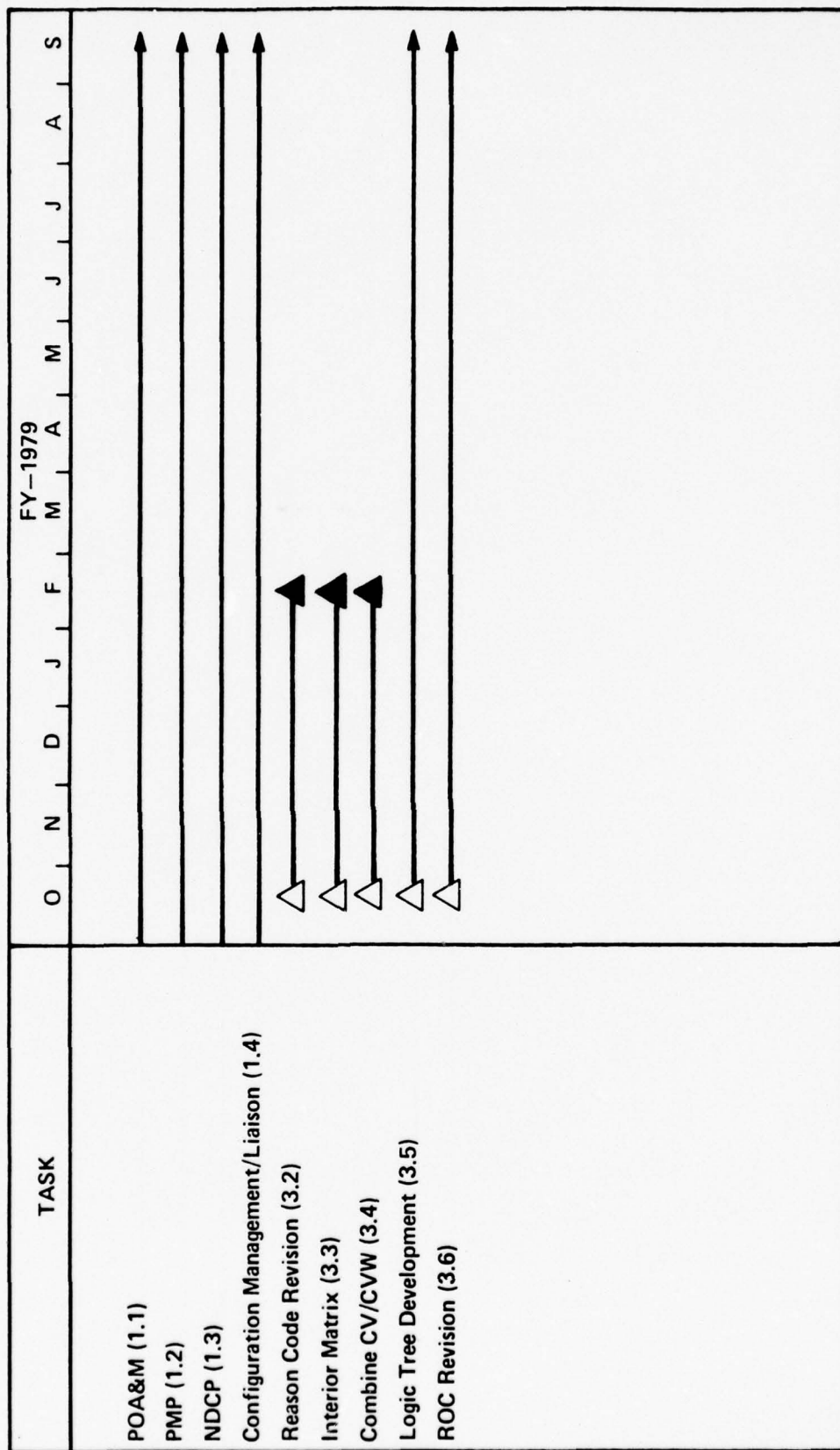


Figure B-2. NRRAS Major Milestones FY-79

Table B-2. FY-79 Costs By Task

TASK	O&M,N
POA & M (1.1)	16.25K
PMP (1.2)	16.25K
NDCP (1.3)	16.25K
Configuration Management/Fleet Liaison (1.4)	16.25K
Reason Code Revision (3.2)	27.1K
Interior Matrix (3.3)	27.1K
Combine CV/CVW (3.4)	27.1K
Logic Tree Development (3.5)	130.0K
ROC Revision (3.6)	130.0K
FY-1979 Total Cost	406.3K

ANNEX 3

TECHNICAL APPROACH FY-80

B.3 Description of Tasks. The following tasks will not reach completion in FY-79 and will continue into FY-80.

- a. Task 1.1: POA&M.
- b. Task 1.2: PMP.
- c. Task 1.3: NDCP.
- d. Task 1.4: Configuration Management/Fleet Liaison.
- e. Task 3.5: Logic Tree Development.
- f. Task 3.6: ROC Revision.

In addition to a continuation of the above tasks, work will commence on six new tasks in FY-80. The new tasks in FY-80 are related to long range improvements and integration in NRS. The new FY-80 tasks are described in the following paragraphs.

B.3.1 Task 4.1: NRRAS System Description. A NRRAS System Description shall be prepared in accordance with NRRAS program objectives. This description shall establish the requirements which must be satisfied by the system.

B.3.2 Task 4.2: NRRAS Software Specification. A software specification shall be prepared which contains functional performance and interface requirements for the system based on the results of Task 4.1, NRRAS System Description.

B.3.3 Task 4.3: Platform Specific Logic Trees. To increase standardization and objectivity, Platform Specific Logic Trees shall be developed.

B.3.4 Task 4.5: CNO Management Information System (MIS) Specification. A management information system specification shall be prepared to establish the requirements for deriving analytical information for management decisions.

B.3.5 Task 4.7: TYCOM MIS Specification. A management information system specification shall be prepared to establish the requirements for deriving the analytical information for management decisions.

B.3.6 Task 5.1: Navy Readiness Reporting Instruction. The NAVFORSTAT instruction shall be revised in order to fully integrate the NRRAS into the NRS and to accommodate all changes resulting from the various tasks within this PMP.

B.3.7 Milestones. The milestones presented in Figure B-3 reflect the tasks which are continued from FY-79 and the six new tasks which commence in FY-80. All of these tasks except the continuing tasks from FY-79 (Tasks 1.1, 1.2, 1.3 and 1.4) and Task 4.3 will be completed in FY-80.

B.3.8 FY-80 Costs. Table B-3 contains the costs for the tasks continued from FY-79 as well as the six new FY-80 tasks.

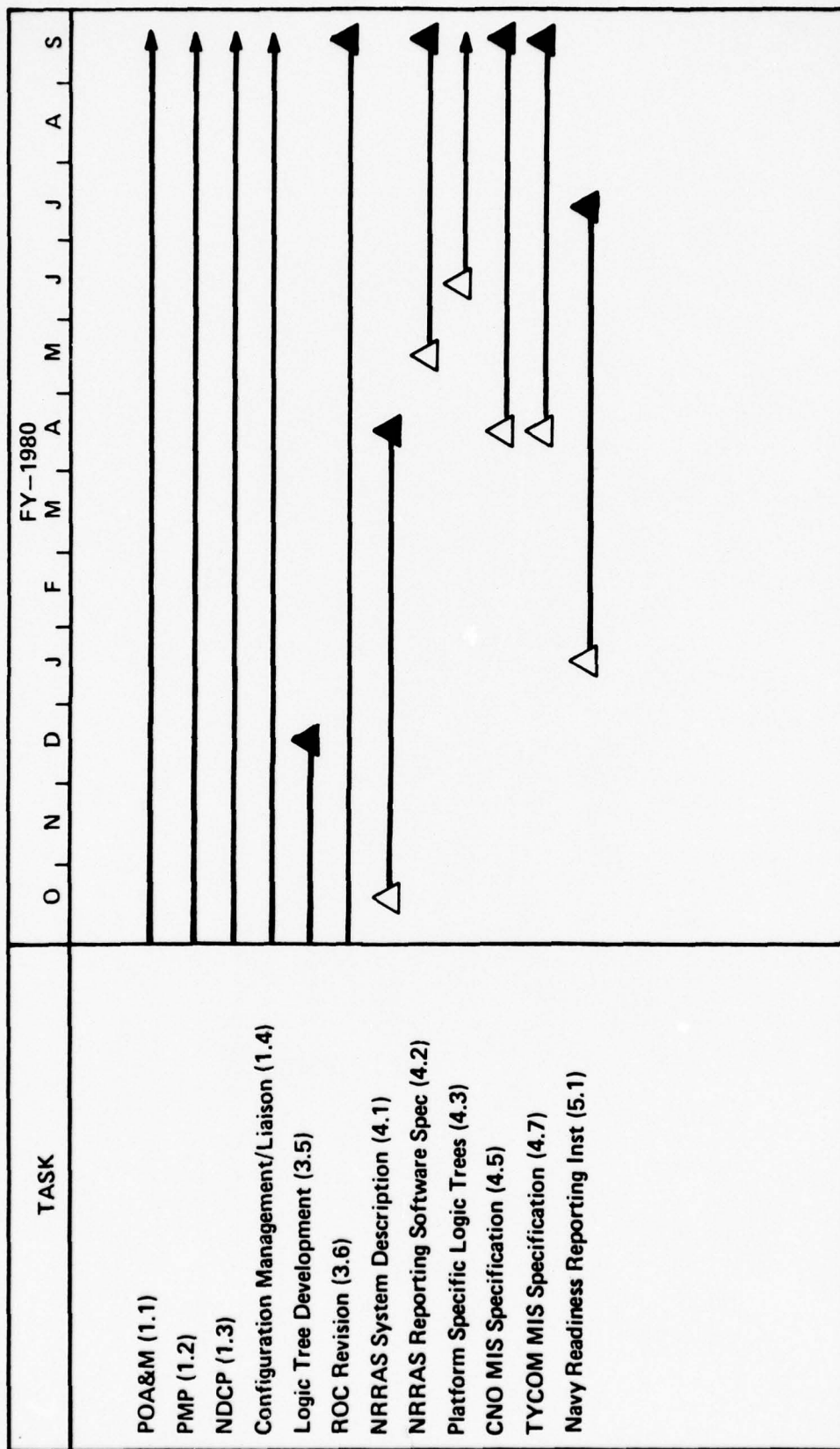


Figure B-3. NRRAS Major Milestones FY-80

Table B-3. FY-80 Costs By Task

TASK	O&M, N	RDT&E
POA&M (1.1)	16.25K	
PMP (1.2)	16.25K	
NDCP (1.3)	16.25K	
Configuration Management/Fleet Liaison (1.4)	16.25K	
Logic Tree Development (3.5)	32.5K	
ROC Revision (3.6)	130.0K	
NRRAS System Description (4.1)	195.0K	
NRRAS Reporting Software Specification (4.2)	54.2K	
Platform Specific Logic Trees (4.3)	130.0K	
CNO MIS Specification (4.5)	65.0K	
TYCOM MIS Specification (4.7)	65.0K	
Navy Readiness Reporting Instruction (5.1)		130.0K*
FY-1980 Total Cost	736.7K	130.0K*

*Not included in NRRAS costs

ANNEX 4

TECHNICAL APPROACH FY-81

B.4 Description of Tasks. The following tasks will not reach completion in FY-80 and will continue into FY-81.

- a. Task 1.1: POA&M.
- b. Task 1.2: PMP.
- c. Task 1.3: NDCP.
- d. Task 1.4: Configuration Management/Fleet Liaison.
- e. Task 4.3: Platform Specific Logic Trees.

In addition to a continuation of the above tasks, work will commence on five new tasks in FY-81. The new tasks in FY-81 are related to long range improvements and training and test and evaluation of the system. The new FY-81 tasks are described in the following paragraphs.

B.4.1 Task 4.4: Software Development of Logic Trees. Software shall be written to incorporate the logic trees into the system at the point of origination, based on the results of Task 4.3.

B.4.2 Task 4.6: CNO MIS Development. This task shall consist of fulfilling the requirements set forth in Task 4.5, CNO MIS Specification.

B.4.3 Task 4.8: TYCOM MIS Development. This task shall consist of fulfilling the requirements set forth in Task 4.7, TYCOM MIS Specification.

B.4.4 Task 6.4: CNO MIS Installation and Check-Out (I&CO), Operational Test and Evaluation (OT&E). This task encompasses the I&CO of the MIS along with an analysis to determine that the MIS specified requirements are satisfied.

B.4.5 Task 6.5: TYCOM MIS I&CO, OT&E. This task encompasses the I&CO of the MIS along with an analysis to determine that the specified MIS requirements are satisfied.

B.4.6 Milestones. The milestones presented in Figure B-4 reflect the tasks which are continued from FY-80 and the five new tasks which commence in FY-81. All of the tasks except Task 4.4 will be completed in FY-81.

B.4.7 FY-81 Costs. Table B-4 contains the costs for the tasks continued from FY-80 as well as the five new tasks in FY-81.

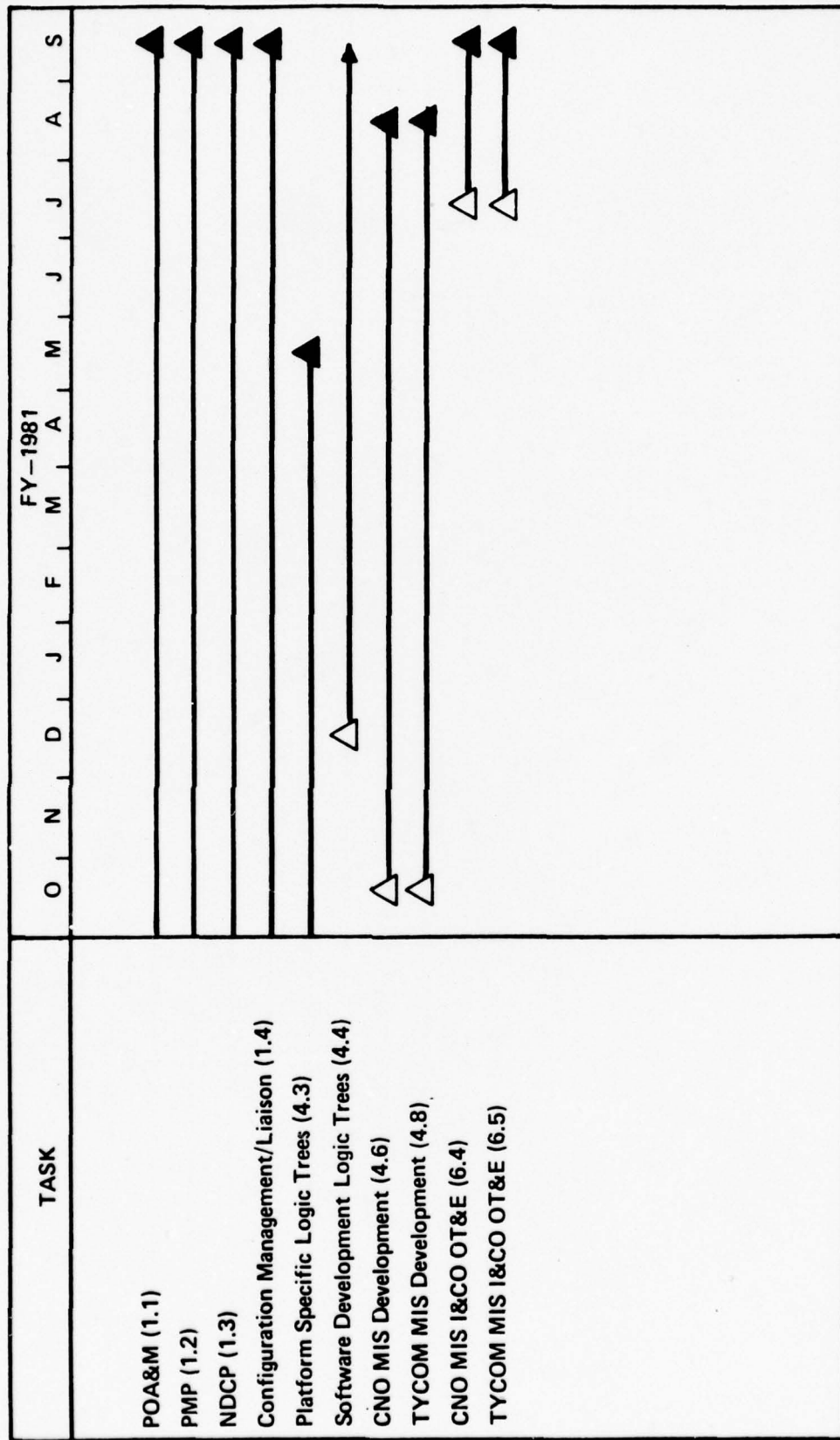


Figure B-4. NRRAS Major Milestones FY-81

Table B-4. FY-81 Costs By Task

TASK	O&M,N
POA & M (1.1)	16.25K
PMP (1.2)	16.25K
NDCP (1.3)	16.25K
Configuration Management/Fleet Liaison (1.4)	16.25K
Platform Specific Logic Trees (4.3)	227.5K
Software Development Logic Trees (4.4)	162.5K
CNO MIS Development (4.6)	195.0K
TYCOM MIS Development (4.8)	195.0K
CNO MIS I&CO, OT&E (6.4)	32.5K
TYCOM MIS I&CO, OT&E (6.5)	32.5K
FY-1981 Total Cost	910.0K

ANNEX 5

TECHNICAL APPROACH FY-82

B.5 Description of Tasks. The following task will not reach completion in FY-81 and will continue into FY-82.

● Task 4.4: Software Development of Logic Trees.

In addition to the continuation of the above task, work will commence on four new tasks in FY-82. The new tasks are related to training and test and evaluation. The new FY-82 tasks are described in the following paragraphs.

B.5.1 Task 6.1: NRRAS Training. This training shall be at the working level to provide an understanding of the mechanics of the system and to promote proper performance by originators/technicians.

B.5.2 Task 6.2: CNO & TYCOM Training. This training will be at the highest levels possible within OPNAV, the Navy Material Command and TYCOMS in order to ensure an understanding of the new system and the information that can be obtained therefrom.

B.5.3 Task 6.3: Software I&CO, OT&E. This task encompasses the I&CO of the software along with an analysis through OT&E to determine that the specified software requirements are satisfied.

B.5.4 Task 6.6: CNO & TYCOM T&E. Following completion of the I&CO, NRRAS shall undergo a development T&E to determine the effectiveness of the reporting system. The system output shall be analyzed to determine that the analytical results will assist management in the decision making process.

B.5.5 Milestones. The milestones presented in Figure B-5 reflect the completion of all tasks.

B.5.6 FY-82 Costs. Table B-5 contains the costs for the tasks continued from FY-81 as well as the four new tasks in FY-82.

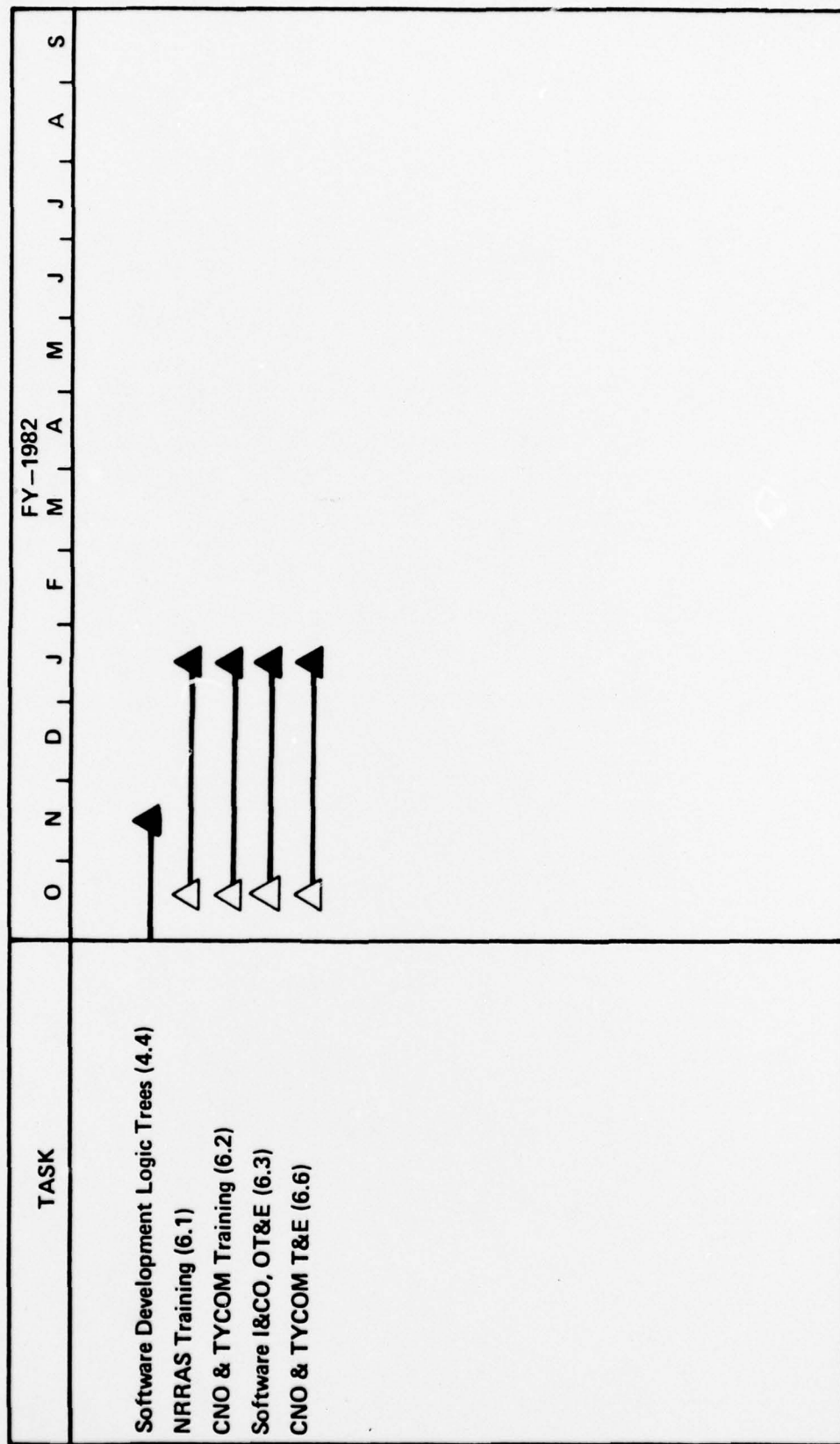


Figure B-5. NRRAS Major Milestones FY-82

This figure displays a vertical sequence of 18 grayscale images, likely generated by a generative model. The sequence starts with a dark, noisy image at the top and gradually transforms through intermediate stages to a clean, reconstructed image at the bottom. The images are arranged in a single column, showing the progression of the reconstruction process.

TASK	O&M,N
Software Development Logic Trees (4.4)	32.5K
NRRAS Training (6.1)	32.5K
CNO & TYCOM Training (6.2)	32.5K
Software I&CO, OT&E (6.3)	32.5K
CNO & TYCOM T&E (6.6)	32.5K
FY-1982 Total Cost	162.5K

APPENDIX C

NRRAS/NRS TASK INTERDEPENDENCY

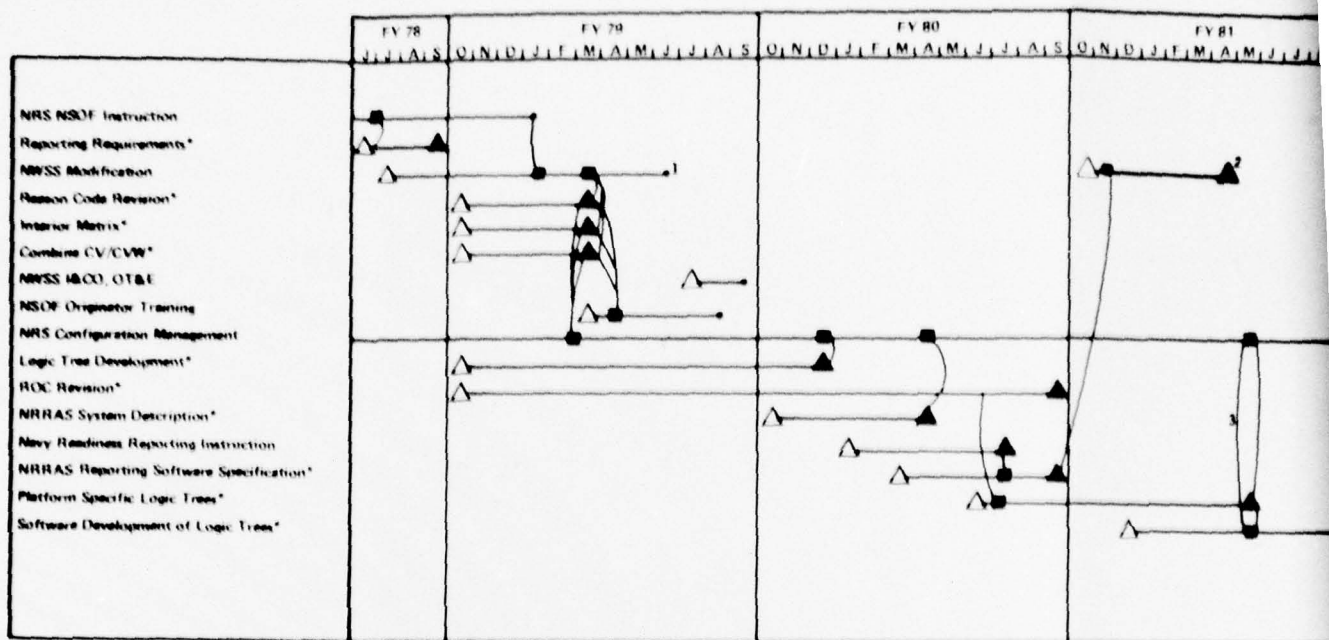
APPENDIX C

NRRAS/NRS TASK INTERDEPENDENCY

The task interdependency associated with NRRAS and NRS is shown in Figure C-1. The interdependency chart depicts the NRS tasks that are dependent upon NRRAS tasks for inputs/completion. Time phasing is indicated in each case except as noted by footnote 3. The square box legend indicates that an NRS task is receiving an input from the dependent NRRAS task. Only the NRRAS tasks which affect the critical path of the NRS are delineated. The dependent NRRAS tasks are indicated by an asterisk.

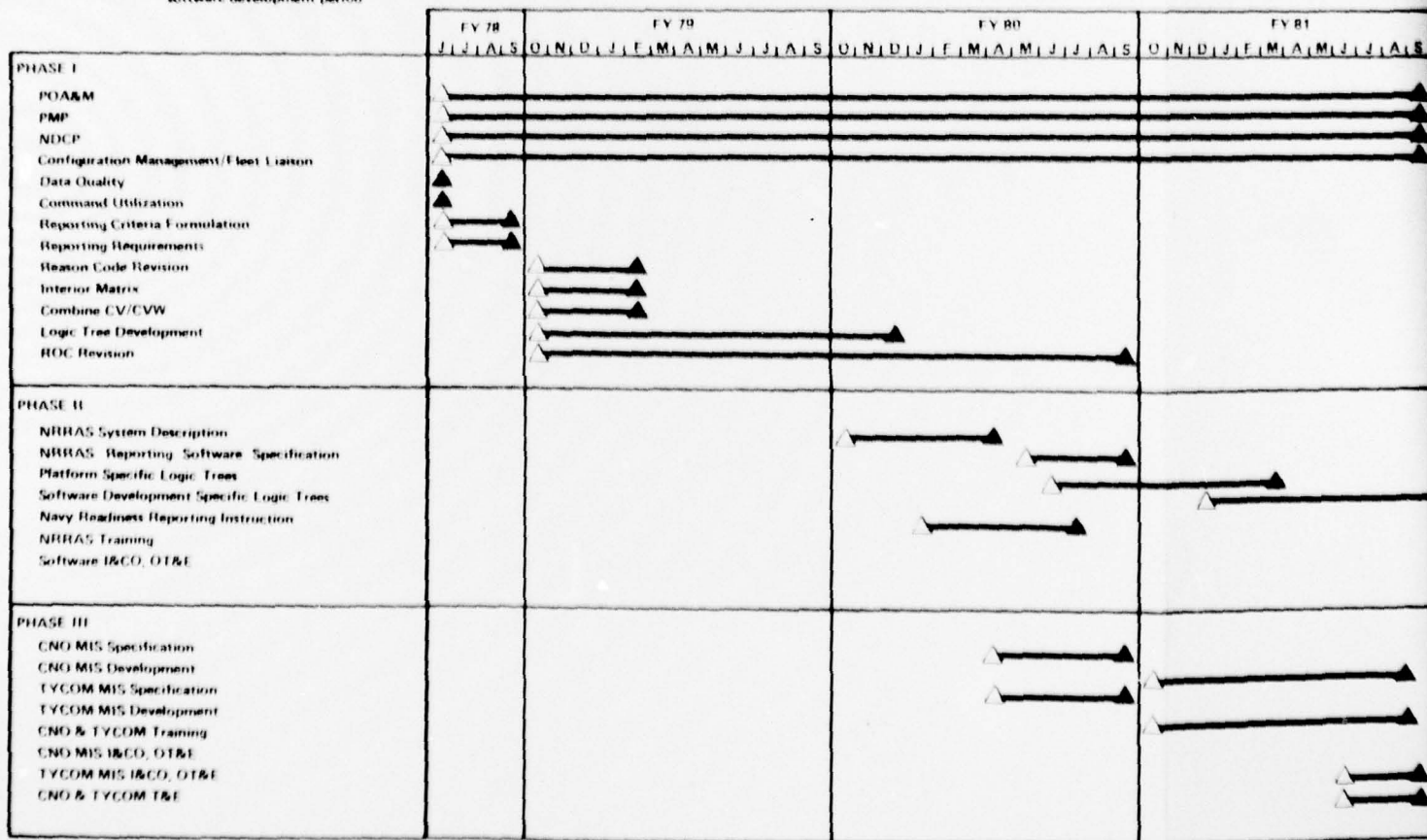
This chart should be used with caution because the NRS program, beyond 2nd QTR FY-79, has not been formalized. Such formalization will occur upon approval of the NRS NDCP.

Figure C-2, the lower chart, is a reprint of Figure 2-2, NRRAS Major Milestones, Alternative 2. It is presented for ease of correlation with the interdependency chart.



- Notes:
1. NRRSS modifications for NRS
 2. NRRSS modifications for NRRAS
 3. Software Development of logic trees will be interdependent with NRS configuration management throughout software development period

Figure C-1. NRRAS/NRS Task Interdependency



- Legend:
- NRS Completion
 - ▲ Start of Task
 - ▲ NRRAS Completion
 - Dependent Task

Figure C-2. NRRAS Major Milestones
Alternative 2

FY 82

J J A S O N D J J F M A M J J A S

J J A S O N D J J F M A M J J A S

	FY 82
I A S O N D J F M A M J J A S	

APPENDIX D

OP-643 BILLET STRUCTURE

APPENDIX D

OP-643 BILLET STRUCTURE

In light of the enhanced capabilities to be effected through the NRRAS, as reflected in this PMP, and the NRS, increased personnel billet requirements for OP-643 to perform minimum functions are displayed in Figure D-1. A comparison of the present structure relative to the recommended structure of Figure D-1 is displayed in Table D-1.

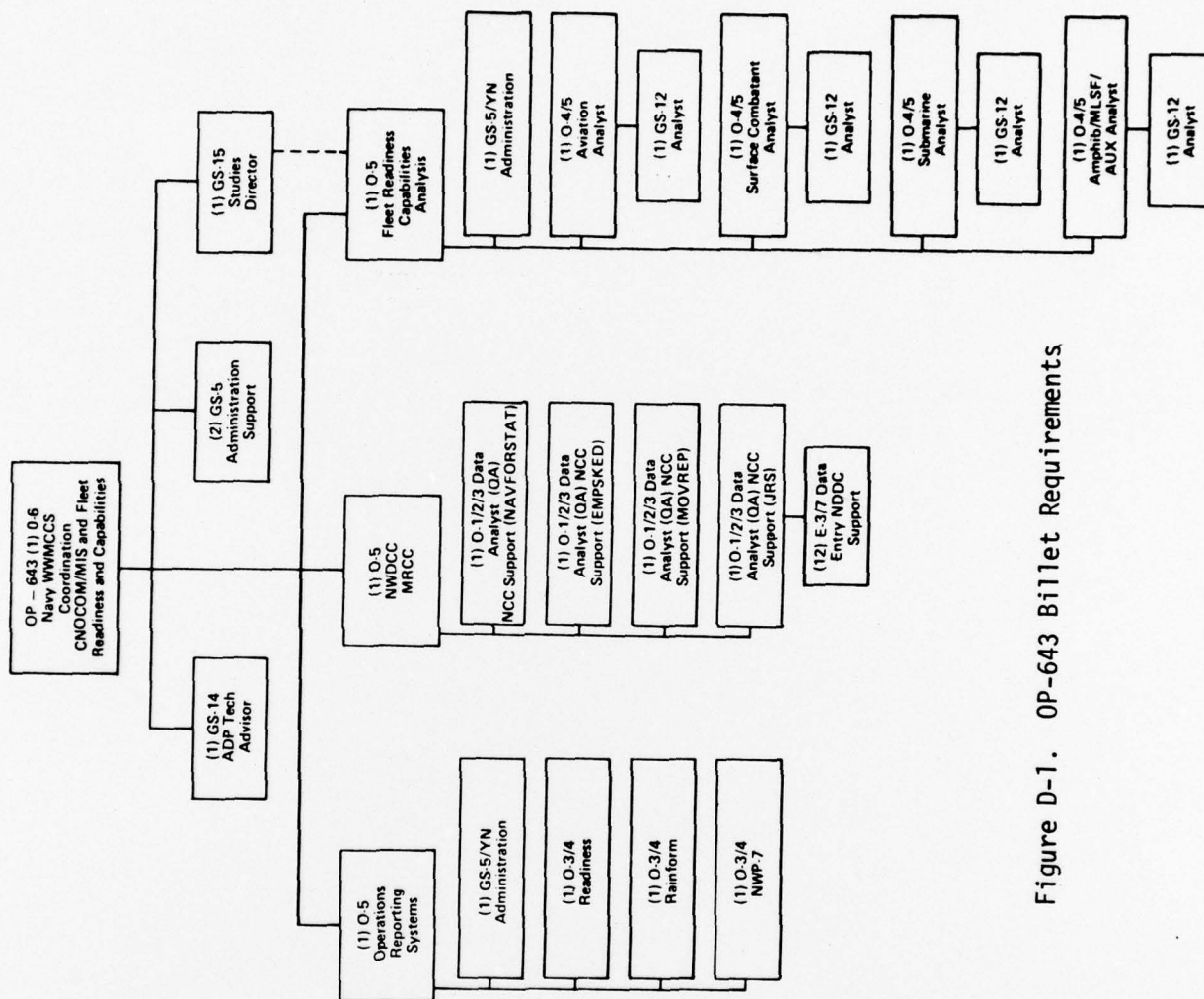


Figure D-1. OP-643 Billet Requirements

Table D-1. Billet Structure Comparison

PRESENT	RANK/RATE/GRADE	RECOMMENDED (Alternative)
1	O-6	1
3	O-5	3
1	O-4	4 (O-4/5)
1	O-3	3 (O-3/4)
4	O-2	4 (O-1/2/3)
10	E-3/7	14 (2 GS-5 ADMN)
	GS-15	1
1	GS-14	1
1	GS-12	4
1	GS-5	2
<hr/> 23	TOTAL	<hr/> 37

APPENDIX E

ACRONYMS

SECTION 4. ACRONYMS

ADP	-----	Automatic Data Processing
CNO	-----	Chief of Naval Operations
CNOCOM/MIS	-----	CNO Command/Management Information System
CORS	-----	Composite Operations Reporting System - see NRS
CV/CVW	-----	Carrier/Carrier Air Wing
DOD	-----	Department of Defense
DPPG	-----	Defense Policy and Planning Guidance
EMPSKEDS	-----	Employment Schedules
FLTCINC	-----	Fleet Commander-in-Chief
GAO	-----	Government Accounting Office
I&CO	-----	Installation and Check-Out
JCS	-----	Joint Chiefs of Staff
JRS	-----	Joint Reporting Structure
MIS	-----	Management Information System
MOVREP	-----	Movement Report
MRCC	-----	Movement Report Control Center
NARDAC	-----	Navy Regional Data Automation Center
NAVAIRFOR (CV)	-----	Naval Air Force (Carrier)
NAVAIRFOR (SQD)	-----	Naval Air Force (Squadron)
NAVFORSTAT	-----	Navy Force Status
NAVSUBFOR	-----	Naval Submarine Force
NAVSURFOR	-----	Naval Surface Force
NCA	-----	National Command Authorities
NCC	-----	Navy Command Center
NDCP	-----	Navy Decision Coordinating Paper
NRRAS	-----	Navy Readiness Reporting and Analysis System
NRS	-----	Navy Reporting Structure (Previously Composite Operations Reporting System (CORS))
NWDCC	-----	Navy WWMCCS Data Control Center
NWP-7	-----	Navy Tactical Publication-"Operational Reports"
O&M,N	-----	Operations and Maintenance Funding, Navy

SECTION 4. ACRONYMS (Continued)

OT&E ----- Operational Test and Evaluation
PMP ----- Program Master Plan
POA&M ----- Plan of Action and Milestones
POE ----- Projected Operating Environment
QA ----- Quality Assurance
RDT&E,N ----- Research, Development, Test and Evaluation
Funding, Navy
ROC ----- Required Operational Capability
T&E ----- Test and Evaluation
TYCOM ----- Type Commander
WBS ----- Work Breakdown Structure
WWMCCS ----- Worldwide Military Command and Control System